

49,823 Household Electric Refrigerators Sold In March By 12 Manufacturers

Reported by Refrigeration Division of National Electrical Manufacturers Association. Member companies: Copeland, Crosley, Frigidaire, General Electric, Gibson, Grigsby-Grinnow, Kelvinator, Norge, Servel, Trupar, Universal Cooler, and Westinghouse.

HOUSEHOLD			U. S. A. INVENTORIES		
Laquer (Ext.) Cabinets with Systems			Factory, Branch, and Warehouse		
Quantity	Dollars		Quantity	Dollars	Dealers and Distributors
1. Under 4.00 cubic feet.....	587	20,739	1,639	92,597	Quantity 1,183 Dollars 67,898
2. 4 to 4.99 cubic feet.....	13,001	740,687	20,471	1,541,230	16,710 1,124,257
3. 5 to 5.99 cubic feet.....	4,105	292,087	7,323	550,662	5,003 381,687
4. 6 to 6.99 cubic feet.....	7,705	587,429	21,523	2,332,505	13,201 1,219,900
5. 7 to 7.99 cubic feet.....	4,053	364,724	7,760	698,137	5,381 397,593
6. 8 to 8.99 cubic feet.....	824	82,568	3,598	565,766	2,160 478,339
7. 9 to 9.99 cubic feet.....	30	6,156	2,009	401,937	1,534 129,115
8. 10 to 10.99 cubic feet.....	12	2,810	445	108,982	123 29,791
9. 11 to 11.99 cubic feet.....	3	951	247	71,161	79 23,005
10. Total Laquer.....	30,330	2,108,351	65,014	6,352,977	45,389 3,851,585
Porcelain (Ext.) Cabinets with Systems			Dealers and Distributors		
Quantity	Dollars		Quantity	Dollars	
11. Under 4.00 cubic feet.....	232	14,178	1,971	29,086	425 21,577
12. 4 to 4.99 cubic feet.....	2,857	205,859	2,279	269,444	2,533 183,220
13. 5 to 5.99 cubic feet.....	2,647	208,906	3,865	86,557	2,569 223,116
14. 6 to 6.99 cubic feet.....	4,381	415,373	2,849	452,739	3,625 371,599
15. 7 to 7.99 cubic feet.....	5,809	682,953	1,545	400,044	3,418 386,804
16. 8 to 8.99 cubic feet.....	1,638	223,758	2,042	166,320	2,857 405,270
17. 9 to 9.99 cubic feet.....	686	98,420	2,569	323,298	1,106 201,322
18. 10 to 10.99 cubic feet.....	240	47,501	1,095	506,463	464 93,055
19. 11 to 11.99 cubic feet.....	19	5,751	1,211	361,723	241 74,356
20. Total Porcelain.....	18,509	1,902,728	18,773	2,595,674	17,233 1,972,319
21. Total Lines 10 and 20.....	48,839	4,011,079	83,787	8,948,651	62,627 5,823,904
22. Separate Systems.....	519	18,095	2,879	171,770	257 8,776
23. Separate Household Low Sides.....	465	7,347	2,874	55,252	658 13,409
24. Total Lines 21, 22, and 23.....	49,823	4,036,521	89,540	9,175,673	63,542 6,846,189
25. High Sides Under 1/3 hp.....	709	28,966	3,064	145,241	384 18,809
26. Cabinets—No Systems.....	470	20,967	40,513	1,658,900	163 18,028
27. ....	.....	.....	.....	.....	.....
28. Totals Household.....	4,006,454	.....	10,978,814	.....	5,882,926
COMMERCIAL			Dealers and Distributors		
Quantity	Dollars		Quantity	Dollars	
31. Water Coolers with High Sides.....	521	44,442	11,227	1,148,665	3,183 339,506
32. Water Coolers with No High Sides.....	104	5,374	905	42,827	172 8,757
33. Ice Cream Cabinets with High Sides.....	332	39,955	4,592	593,549	104 12,918
34. Ice Cream Cabinets with No High Sides.....	320	37,040	5,238	626,370	238 27,623
35. Milk Coolers with No High Sides.....	.....	.....	7	1,189	60 10,188
36. Room Coolers with High Sides.....	.....	.....	3	1,568	1 523
37. Room Coolers with No High Sides.....	35	3,160	2,700	245,519	218 21,293
38. Extra High Sides, 1/3 hp. and Up.....	3,272	320,798	11,282	1,305,714	3,020 378,528
39. Total Lines 31, 33, 35, and 38.....	3,687	.....	27,104	.....	6,308 140,420
40. Extra Commercial Low Sides.....	4,773	133,623	17,056	802,055	4,333 135,619
41. Miscellaneous Cases and Cabinets.....	20	4,379	.....	344,260	.....
42. ....	.....	.....	.....	.....	.....
43. Total Commercial.....	588,771	.....	5,111,716	.....	1,075,375
44. Totals—Household and Commercial.....	4,675,225	.....	16,216,530	.....	6,958,301

*The total of the figures by sizes and kinds does not agree with the total figure shown, namely \$16,216,530 because of the failure to supply the detailed information by all companies.
The number of companies reporting inventories at factory, branches, and warehouses was 10. The percentage of total sales of these 10 companies was 96.3.
**The number of companies reporting inventories of dealers and distributors was 9. The percentage of total sales of these 9 companies was 89.10.

FRIGIDAIRE SALES GO UP 93% AT CHICAGO BRANCH

CHICAGO—Household sales of Frigidaire Sales Corp., factory branch here, increased 93 per cent in the first 21 days of April, according to Lowell McCutcheon, district manager.

"For the first time since 1929, the demand for products exceeds the supply," says Mr. McCutcheon. "Show-room turnouts have been unusually large since the displays were placed in our six Chicago stores."

"Down payments are larger than ever before, and many customers are paying cash."

C. V. Yelton, salesman in the Oak Park selling division of the Chicago operation, averaged a sale a day for the first 21 days, according to Mr. McCutcheon.

LEONARD DEALERS TO USE STANDARD NEON SIGN

DETROIT—A standard neon sign for dealers in Leonard electric refrigerators is now available to the field, according to A. M. Taylor, merchandising director of the Leonard Refrigerator Co. The sign is 36 in. long and 12 in. high, with the word Leonard in white-painted letters 5 in. high illuminated by a red neon tube—and the whole surrounded by a blue neon tube border.

Financial Statement

General Motors Corp.

NEW YORK CITY—Net earnings of General Motors Corp. for the first quarter of 1933 were reported April 26 as \$6,870,007, the equivalent of 11 cents per share on the average number of common stock shares outstanding.

During the first quarter of 1932 the corporation made net earnings of \$9,693,027—17 cents per share of common stock.

Sales for 1933's first quarter totaled \$120,000,163, according to Alfred P. Sloan, Jr., General Motors president. During the first three months of 1932, sales amounted to \$149,663,716, he said.

The financial statement just issued does not make provision for losses on cash balances in closed banks. These losses, on April 25, were approximately \$13,043,878, the president estimated.

On March 31, the company had \$148,211,686 in cash, United States government and other marketable securities, excluding balances in closed banks. On Dec. 31, 1932, the corporation had \$172,780,696 in the same type of assets, and on March 31, 1932, \$186,777,639.

The company's net working capital on March 31 of this year was \$217,468,700, excluding cash balances in closed banks, compared with \$225,437,194 on Dec. 31, 1932, and \$271,536,282 on March 31, 1932.

Nema Distribution By States

STATES and Territories	Quantity of HOUSEHOLD Low Sides
Connecticut.....	608
Maine.....	273
Massachusetts.....	1,748
New Hampshire.....	2,197
Rhode Island.....	407
Vermont.....	69
New England Total.....	3,229
Delaware.....	62
Maryland & D. C.....	1,649
New Jersey.....	2,197
New York (State).....	8,170
Pennsylvania.....	4,346
Eastern Total.....	16,424
Kentucky.....	559
Ohio.....	2,125
West Virginia.....	366
East Central Total.....	3,050
Alabama.....	651
Florida.....	306
Georgia.....	524
North Carolina.....	649
South Carolina.....	396
Tennessee.....	440
Virginia.....	910
Southeastern Total.....	3,776
Illinois.....	4,030
Indiana.....	775
Michigan.....	926
Wisconsin.....	658
Great Lakes Total.....	6,371
Minnesota.....	925
North Dakota.....	105
South Dakota.....	105
North Central Total.....	1,134
Iowa.....	726
Kansas.....	625
Missouri.....	2,587
Nebraska.....	421
Middle West Total.....	4,342
Arizona.....	149
California.....	3,021
Nevada.....	421
Pacific Coast Total.....	3,191
Idaho.....	67
Montana.....	236
Oregon.....	345
Utah.....	92
Washington.....	429
Northwestern Total.....	1,169
Colorado.....	482
New Mexico.....	71
Wyoming.....	40
Rocky Mountain Total.....	593
Arkansas.....	146
Louisiana.....	435
Mississippi.....	128
Oklahoma.....	663
Texas.....	2,064
Southwestern Total.....	3,496
Total United States.....	46,795
Total Canada.....	533
Other Foreign (Including U. S. Possessions).....	2,499
Total for World.....	49,827

ALBANY DISTRIBUTING CORP. DEALERS MEET

ALBANY, N. Y.—Albany Distributing Corp., Albany, N. Y., distributor of Copeland electric refrigerators for eastern New York, held a dealers' meeting at their headquarters in the Central Terminal building, April 24. At this meeting the new Copeland line was shown and sales campaign explained by Erwin Brown, general sales manager of the Albany Distributing Corp.

Bureau Estimates 3-Months Sales

	Three Months Quota (30% of Year's Quota)	Estimated Total Sales	% Quota Realization
New England Division			
Connecticut.....	3,063	1,690	55.1
Maine.....	1,247	725	58.1
Massachusetts.....	7,806	5,403	69.2
New Hampshire.....	802	429	53.4
Rhode Island.....	1,287	928	72.1
Vermont.....	525	332	63.2
Eastern Division			
Delaware.....	321	227	70.7
Maryland & D. C.....	3,189	3,883	121.7
New Jersey.....	7,804	4,895	62.7
New York.....	24,790	21,677	87.4
Pennsylvania.....	13,750	9,678	70.3
East Central Division			
Kentucky.....	1,787	1,429	79.9
Ohio.....	10,246	5,538	54.0
West Virginia.....	1,230	1,053	86.3
Middle West Division			
Iowa.....	3,046	1,661	54.5
Kansas.....	2,268	1,621	71.4
Missouri.....	4,416	5,529	125.2
Nebraska.....	1,567	869	55.4
Pacific Coast Division			
California.....	12,547	7,826	62.3
Nevada.....	114	52	45.6
North West Division			
Idaho.....	516	167	32.3
Montana.....	557	378	67.8
Oregon.....	1,579	737	46.6
Utah.....	770	156	20.2
Washington.....	2,854	1,077	37.7
South Eastern Division			
Alabama.....	1,094	1,223	111.7
Florida.....	1,537	822	53.4
Georgia.....	1,307	1,261	96.4
North Carolina.....	1,720	1,239	72.0
South Carolina.....	686	730	106.4
Tennessee.....	1,566	1,037	66.2
Virginia.....	1,747	1,755	100.4
Great Lakes Division			
Illinois.....	12,291	8,502	69.1
Indiana.....	4,477	2,135	47.6
Michigan.....	7,038	2,095	29.7
Wisconsin.....	4,138	1,517	36.6
North Central Division			
Minnesota.....	3,162	2,064	65.2
North Dakota.....	399	189	47.3
South Dakota.....	512	277	54.1
Rocky Mountain Division			
Colorado.....	1,349	1,222	90.5
New Mexico.....	218	198	90.8
Wyoming.....	209	73	34.9
Southwestern Division			
Arkansas.....	733	483	65.8
Louisiana.....	1,305	1,048	80.3
Mississippi.....	548	307	56.0
Oklahoma.....	1,669	1,496	89.0
Texas.....	4,188	4,597	109.7
Totals.....	160,434	112,643	70.2

ELECTRICITY OUTPUT IN EAST INCREASES

NEW YORK CITY—Output of electricity by central stations in the Atlantic seaboard section of the United States during the week ending April 22 exceeded the stations' production for the same period in 1932 by 1.1 per cent greater than for the preceding year's corresponding period. Increase in the Atlantic seaboard section was first reported this year which exceeds output figures for last year.

Wurlitzer Wholesale Division Moves

PHILADELPHIA—Rudolph Wurlitzer Mfg. Co.'s wholesale division, handling the company's Mohawk refrigerators and washers and Lyric radios, has transferred its headquarters from North Tonawanda, N. Y., to 1033 Chestnut St., Philadelphia.

In charge of the department's operations is Lou Sullivan, who for the past three years has been wholesale director at the manufacturer's factory at North Tonawanda. Mr. Sullivan plans a concentrated drive for sales in the Eastern market in the near future.

Liquid Cooler Moves Chicago Office

CHICAGO—Chicago district offices of Detroit's Liquid Cooler Corp. have been moved to 4820 West Chicago Ave., according to H. B. McLaughlin, district manager here.

Mr. McLaughlin reports that 12 of the 14 Chicago concerns now manufacturing bar equipment are now using Liquid Cooler's Temprite coolers in their bars.

GIBSON HOME ECONOMIST CONDUCTS FOOD SCHOOLS

GREENVILLE, Mich.—Miss Jacqueline Frost, director Gibson Electric Refrigerator Corp.'s home economics department, recently concluded a series of food economy classes here and in Battle Creek.

The classes were sponsored by George A. Pelgrim of the Bay View Furniture Co. of Holland, western Michigan Gibson distributor. Cooperating dealers were Consumers Power Co. and Deal & Fries of Greenville, and the Porter Furniture Co. of Battle Creek.

Miss Frost's next classes will be held in Grand Rapids in cooperation with the Young & Chaffee Furniture Co., Gibson dealer. Following week she will conduct classes at Kalamazoo.

CHICAGO STEWART-WARNER DISTRIBUTOR NAMED

CHICAGO—Material Service Corp. here has been appointed wholesale distributor of Stewart-Warner electric refrigerators in the Chicago territory. H. Richardson is in charge of refrigeration sales for this company.

Special Offer:

Forty-one (41) issues of
Electric Refrigeration News
From March 22, (Specifications
Issue) to Dec. 31, 1933
For only \$2.00

Because of the national and local bank holidays many of the readers of ELECTRIC REFRIGERATION NEWS whose subscriptions expired during March were probably forced to let their subscriptions lapse. We have a limited number of March issues in stock which will be supplied without extra charge to all old subscribers who request them when remitting for renewals.

Many readers like to have their subscriptions expire with the calendar year. Here is an opportunity to get your subscription lined up so that it may be renewed at the beginning of each new year.

In these days of changing conditions, new products, revised price schedules, and new selling plans, it is of vital importance to everyone in the refrigeration industry to be kept fully informed on what is happening and to get that information in time to do something about it. ELECTRIC REFRIGERATION NEWS fills that need with its swift, accurate, complete, and interesting reports of industry events.

Use this coupon to start a new subscription or renew an old one beginning with the Specifications Issue of March 22 and running through to the end of the year.

CLIP, SIGN and MAIL TODAY

Electric Refrigeration News
550 Maccahees Bldg., Detroit, Mich.

☐ Enter a new subscription. ☐ Renew my old subscription.

I understand that you will send 41 issues beginning with the Specifications Issue of March 22, and ending Dec. 31, 1933, at the special rate of \$2.00.

Enclosed find ☐ Check ☐ Money Order ☐ Cash ☐ Stamps.

(Name)

(Company)

(Street Address)

(City and State)

ERN 5-3-33

NOTE: You may obtain a copy of the Refrigeration Directory and Market Data Book (500 pages, paper cover), revised to October, 1932, by adding 50 cents to your remittance.

REFRIGERATION NEWS

ESTABLISHED 1926. MEMBER AUDIT BUREAU OF CIRCULATIONS. MEMBER ASSOCIATED BUSINESS PAPERS.

VOL. 9, No. 2, SERIAL No. 216
ISSUED EVERY WEEKCopyright, 1933, by
Business News Pub. Co.

DETROIT, MICHIGAN, MAY 10, 1933

Entered as second-class
matter Aug. 1, 1927THREE DOLLARS PER YEAR
TEN CENTS PER COPY

NORGE ORDERS FOR 6 DAYS TOTAL 7,446 UNITS

ENGINEERS WILL MEET IN CHICAGO JUNE 26 AND 27

Air Conditioning and Heat Problems On Program

CHICAGO—Complete program of the two-day convention of the American Society of Refrigerating Engineers to be held June 26 and 27 at the Hotel Sherman here during Engineers' Week of the Century of Progress, has just been announced by A. R. Stevenson, Jr., chairman of the program committee. More than 30 technical societies have meetings scheduled in Chicago during Engineers' Week.

Hosts to the refrigerating engineers will be members of the Chicago A.S.R.E., under the chairmanship of Ben E. Seamon, Chicago secretary. Special round-trip rates to Chicago are being offered by several railroads.

The A.S.R.E. program includes a variety of topics, Mr. Stevenson points out, under three general heads—new developments, air conditioning, and thermal problems.

Registration begins at 9:30 o'clock
(Concluded on Page 4, Column 2)

MONITOR TOPS NOW SELL FOR \$142, \$190

DETROIT—General Electric Co. has reduced prices on its monitor top models S-44 and S-67 to \$142 and \$190, respectively, according to C. J. Detmers, sales supervisor of Caswell, Inc., G. E. Michigan distributor here. These are f.o.b. factory prices.

Factory instructions to the distributorship are that these prices are guaranteed only during May, says Mr. Detmers.

Model S-44 was formerly priced at \$155 f.o.b. factory, and model S-67 at \$220 f.o.b. Caswell is selling these models for \$149 and \$199, respectively, delivered in Detroit.

HAY FEVER RELIEVED BY CONDITIONING ROOM AIR

WASHINGTON, D. C.—How a Frigidaire air conditioner was used in experiments made last summer to determine the value of such equipment in relieving hay fever and asthma was told recently when Dr. Leslie N. Gray addressed the annual meeting of the Society for the Study of Hay Fever and Asthma here.

The experiments were conducted at Baltimore's Johns Hopkins Hospital by Dr. Gray, who is a member of the hospital staff. Cooperating with him were J. C. Chambers, manager of Frigidaire Corp.'s air-conditioning department, and H. H. Zimmerman, commercial sales manager of the company's Baltimore-Washington district.

Experiments were held in the pro-
(Concluded on Page 11, Column 4)

Stewart-Warner Vice President Resigns

CHICAGO—Resignation of W. J. Zucker as general sales manager, secretary, vice president, and director of Stewart-Warner Corp. was made known May 5.

Frank A. Hiter, sales manager of Alemit Corp., a subsidiary of Stewart-Warner Corp., succeeds Mr. Zucker as sales manager.

WELLS MANAGES LIBERTY SALES IN NEW ENGLAND

PROVIDENCE, R. I.—Harry Wells of Boston has been appointed New England sales manager for the Liberty Refrigeration Corp., according to J. H. Readie, Jr., Liberty's general manager. Mr. Wells will devote the majority of his time to department store business.

Oh-h-h-h!—It's Cold!



C. G. Rood, vice president of R. Cooper Jr., Inc., Chicago G. E. distributor, helps a little visitor sample a frozen dessert made during a demonstration conducted by Prudence Penny, Chicago newspaper home economist.

U. S. Radio Builds 6-Model Line Of Hermetic Refrigerators

MARION, Ind.—United States Radio & Television Corp. this week is introducing its 1933 six-model line of U. S. Hermetic refrigerators, ranging in price from \$99.50 to \$174.50 f.o.b. factory, and covered by a one-year overall factory guarantee.

The new refrigerators are being made in three sizes having 4-, 5-, and 6-cu. ft. net capacities, there being an all-porcelain and a lacquer model for each of these sizes. Except for ex-

terior finish, the two models for each capacity are identical.

Unit used in the new line is a one-cylinder, hermetically sealed, reciprocating compressor which is called the "Roto-Pulse" by its manufacturer. The unit, which uses sulphur dioxide, is located above the food chamber in all models.

The porcelain-finished Mullins evaporator is located a little to the left of the center in the food storage chamber to facilitate cleaning and increase the bottle storage space.

Other features of the new line are its four-position adjustable door handle and semi-concealed hardware, automatic dome light (in two largest sizes), moulded shelf supports which are an integral part of the porcelain
(Concluded on Page 4, Column 3)

Sterling Will Manage Norge Advertising

DETROIT—James A. Sterling, for two years sales promotion manager of Norge Corp., has been appointed national advertising manager of the organization. He will, however, continue to direct sales promotional activities.

On May 1, the advertising and sales promotion departments of Norge Corp. were consolidated into a single unit, and Mr. Sterling was placed in complete charge of the entire division.

Food News Publishes Specifications of Beer Coolers

Specifications of 32 makes of draft beer-cooling equipment and nine makes of bottle beer coolers are printed in the May issue of REFRIGERATED FOOD NEWS.

In addition to the salient, condensed data given in the specifications, a number of illustrations serve to give the reader a comprehensive idea of the equipment for beer-cooling purposes which is now being offered by leading manufacturers.

The issue also contains a number of other articles dealing with the subject of beer cooling in dispensing outlets.

The May issue also contains the specifications and descriptive stories on the new Carrier and York lines of small commercial refrigerating machines, and other news of importance in the commercial refrigeration field.

Crosley Building 500 Units Daily

CINCINNATI—Crosley Radio Corp. has doubled the number of employees in its refrigeration department and is now producing 500 refrigerators per day, according to G. H. Corbett, advertising manager.

Orders for Crosley electric refrigerators are approximately 100 carloads ahead of production. The refrigerator division is now working three eight-hour shifts per day, says Mr. Corbett.

A single order, received at the Crosley factory last week from the New York City distributor, called for 1,050 of the new Shelvador units. Fifteen freight cars will be required for shipment of these refrigerators.

N. Y. UTILITIES WILL QUIT MERCHANDISING

NEW YORK CITY—The electric companies in this city which are affiliated with Consolidated Gas Co. of New York—namely, New York Edison Co., United Electric Light & Power Co., Brooklyn Edison Co., and New York & Queens Electric Light & Power Co.—are withdrawing July 1 from direct selling of electrical appliances and mazda lamps, according to F. W. Crone, director of the editorial bureau for the gas and electric companies affiliated with the Consolidated Gas Co.

Joint statement of the companies is as follows:

"On July 1 the electric companies in this city, affiliated with Consolidated Gas Co. of New York, will stop all sales of electrical appliances and mazda lamps. For about a year the utilities have been gradually lessening their selling efforts and placing emphasis on promotional work, the chief benefit of which has accrued to the other merchandising outlets.

"It was our belief that the time had come when electrical equipment, from lamps to heavy-duty appliances, had sufficiently demonstrated its merit, and sufficient public acceptance had been built up for it so that electric utilities (in this territory at least) could bene-
(Concluded on Page 4, Column 1)

ZEROZONE DEVELOPS COMMERCIAL MODELS

NEW YORK CITY—A new line of commercial refrigeration equipment including 30 condensing units and eight compressors using methyl chloride as the refrigerant is being introduced by Zerozone, Inc.

The new units range in capacity from 93 lbs. to more than 2 tons of refrigeration per 24 hours, according to E. S. Lape, sales manager of the Zerozone commercial division.

Included in the new line are two series of machines. One is designed for operation at high back pressures only, and the other for normal back pressures. Each of these series includes water-cooled and air-cooled models, says Mr. Lape.

Featured in the line are several models, ranging from 1/6 to 1/2 hp. in capacity, which are particularly applicable for use with beer-cooling equipment.

The company's merchandising of commercial units will be confined to wholesale outlets, according to Mr. Lape. Shipments will be made from the factory in Chicago and the warehouse in New York City.

Norge to Handle Own Export Sales

DETROIT—As a result of a new policy adopted recently by Norge Corp. here, management of the company's export business has been taken out of the hands of export agencies and placed under the supervision of John H. Knapp, vice president in charge of sales.

C. L. Fossati, formerly with the Willys Export Corp., which handled the Norge export account, has been employed as manager of the new department, according to Mr. Knapp.

5,633 UNFILLED ORDERS MAY 8; 2 PLANTS BUSY

Last Six Days of April Best in History Of Company

DETROIT, May 9.—With orders for the last six days of April totaling 7,446 units, Norge Corp.'s production was 5,633 units behind orders yesterday, according to Howard E. Blood, president of the company.

Incoming orders for April reached their peak on April 29, says Mr. Blood, when 1,475 were received. On April 30, the company was 4,183 units behind orders, although its Detroit and Muskegon plants are working full time.

Trilling and Montague, Philadelphia Norge distributor, has purchased 44 carloads of Norges during the past month, according to James A. Sterling, Norge Corp.'s advertising and sales promotion manager. Last 20 carloads of this order are being shipped this week.

The Laney Music Co., El Dorado and Camden, Ark., with a combined population in their territory of 23,694, just bought a carload of Norges. The Stowers Furniture Co. of San Antonio likewise is buying in carload lots. In Overton, Tex., with a population of 426 people, the dealer purchased 10 Norges during the week of April 17 to fill orders on hand.

Prior to April 1, the company added 1,500 employees to its factory force, and has been operating at nearly full capacity since that time.

Prices Not Guaranteed

DETROIT—Norge Corp. here has notified its distributors that it will accept orders for future delivery only with the understanding that the refrigerators will be paid for at price rates current when the units are shipped.

Commenting on this move, Norge's President Howard E. Blood says, "No manufacturer can afford to gamble on price maintenance today. We recently reduced our prices and will attempt to hold those prices, but everything indicates higher prices and we must protect ourselves accordingly."

CURRENT ECONOMICS WILL BE DISCUSSED BY N.E.M.A.

NEW YORK CITY—"The Changing Economic Picture as It Relates to the Electrical Manufacturing Industry" will be the general topic under consideration at the National Electrical Manufacturers Association spring meeting to be held May 22 to 25 at the Homestead, Hot Springs, Va.

Monday, May 22, will be taken up with general sessions in the morning and evening.

During Tuesday the executive committee will consider economic prob-
(Concluded on Page 16, Column 3)

7,500 Men Employed at Frigidaire Plants

DAYTON—With more than 7,500 men now at work in Frigidaire Corp.'s two Dayton plants, the company's May production of household electric refrigerators is scheduled to be double that of May, 1932, according to E. G. Blechler, president. This month's production will be the largest in any one month since July of 1929, Mr. Blechler states.

CORE WILL DIRECT ALL SPARTON ADVERTISING

JACKSON, Mich.—Sparks-Withington Co., manufacturer of Sparton refrigerators, radios, and a line of auto horns, has consolidated advertising and promotional activities for these products into a single department. Guy C. Core, formerly advertising manager of the electric refrigeration division, has been appointed advertising director.

BY GEORGE F. TAUBENECK . . .

Coming Miracles

Over bottles of Kingsbury three-pernt-two in Chicago's Yale-Harvard-Princeton club not long ago JOHN DITZELL, general sales manager of Majestic, offered the opinion that the coming age would reveal some miracles in housing developments.

"Mass production houses may become as commonplace, as satisfactory, and as inexpensive as automobiles," he declared. "And why not? Imagine how much we should spend for an automobile—and how poorly it would run—if we should hire a gang of union laborers to hammer it together from a whole mess of parts and materials delivered to our backyards in trucks?"

"Building houses from the ground up is as antiquated as the hand loom and spinning jenny, or as plowing with a forked stick."

"At the Century of Progress world's fair here you'll see things that'll open your eyes wide. One company, for instance, plans to erect a new and different house on its lot out there every morning, demounting each one at night to make room for the next day's house. That's just a sample."

F. M. COCKRELL once remarked that he thought the present method of building a house by working from the ground up is silly.

First, he believes, the roof should be erected. Then the builders could work underneath it, rain or shine or sleet or snow.

The idea of a revolution in home building and designing has intrigued us for a long time. So much so that for more than a year we have carefully kept a file of all the information we could find on advanced house construction ideas developed both here and abroad.

And with the practically indispensable assistance of our Vassar-graduate secretary, JEAN KERR, we think we have made a fairly comprehensive study of published theses on the subject.

Because the Chicago world's fair, A Century of Progress, will focus attention on new construction methods and styles, we decided that:

The time has come,
The Walrus said,
To speak of many things—
Of glass and tiles and stainless steel

And porcelain and wings.

Truly the attempt to condense, collect, classify, compare, and collate (Note to any college professor readers we may have: There's one for you—the Five C's of Thesis Writing) the available material on New Housing Ideas is a bewildering task.

But if you'll be patient, you may find in the hodge-podge that follows some stimulation for your imagination—and, perhaps, for your inventive talents. And someday we all may be engaged in the promotion of the latest and most important object of specialty salesmanship: factory-built homes.

Fundamentals

What will the Home of the Future be like? Of course one can only guess; but judging from what we can learn of present developments:

It will involve new architecture.
It will contain new materials,
notably the metals.

It will be constructed largely at the factory.

It will more conveniently fit our modern life.

It will be more healthful and comfortable.

It will have fully modern equipment.

It will cost less.

It may involve group housing.

Architecture

Thus far, the engineer has progressed farther into modernism than the architect.

The engineering fraternity discovered sometime ago that a ferro-concrete framework enabled them to build skyscrapers of remarkable height and stability.

The finished product has more window space, less masonry, more room, and great lightness and strength.

Since the framework of reinforced concrete supports the building, walls have become mere curtains—pandering to the eyes of us mortals who still believe that only in stone is there stability.

Forward-thinking architects and builders have begun to realize the possibilities of a new type of house architecture, taking its keynote from the skyscraper.

As a result, houses are now planned with steel framing, and with reinforced concrete supporting members—although their exteriors still reveal

no trace of these modern products, and assume conventional Tudor and Colonial outlines.

Conventionalism is the name applied to this type of modern home architecture. Its advocates hide new materials under old forms. Steel framing and walls are covered with old-fashioned masonry and brick, roofs are sloping, inside walls are plastered. No features are to betray the fact of its steel construction.

Opposing this group are the Functionalists or Internationalists. They resent the tendency to represent modern speed, efficiency, and machine-age thinking by means of serene Greek temples, and rural Cotswold cottages. They would do away with all traditional forms of architecture and substitute a new one picturing the world as it is today.

The factory, to them, is the ideal exponent of modern thinking. It conserves space by its rectangular design, secures permanence and strength through its light but strong ferro-concrete construction, require a maximum of window space to insure light, insists on convenient and compact arrangement of floor plan—in short, it considers primarily its purpose.

Most factories dispense with the distraction of decoration and ornamentation. Taking their cue from the factory, the Functionalists postulate a new kind of architecture.

Structures of today, they insist, whether they be residences, factories, golf clubs, or railroad stations, should clearly indicate harmony with their function, their environment, their materials. Far from hiding construction of their buildings, these architects flaunt such features.

A. H. Barr gives the ideals of the Functionalist attitude in his preface to *The International Style*, by Hitchcock & Johnson. He says:

"The distinguishing aesthetic principles . . . are three: emphasis upon volume—space enclosed by thin planes or surfaces as opposed to the suggestion of mass and solidity; regularity as opposed to symmetry or other kinds of obvious balance; and lastly, dependence upon the intrinsic elegance of materials, technical perfection, and fine proportion, as opposed to applied ornament."

"A style grows out of the needs and laws of living in any country," says Herbert Von Oelson, editor of the Berlin *Die Pyramide*. "The German architecture of today shows a conscious recession of the individual in favor of the community; of luxury in favor of labor and the all-importance of daily living . . . The new German forms in building came out of industrial and economic ideas."

Frank Lloyd Wright

The Horizontal style is an American manifestation of Functionalism. Frank Lloyd Wright, American architect, crusading for the new forms, is given credit for introducing this style.

In this plan columns set back from the walls, are the supports of the floors. The floors are cantilevered beyond the columns, and in turn support the walls.

Since the columns are the real structural members, the walls are relieved of importance. No limit, consequently, need be placed on the amount of window space. Many buildings have complete bands of windows running around the entire building; and these bands, alternating with bands of wall above and below, give rise to a horizontal effect from which the style has been named.

Some Functional homes are also built following an exactly opposite theory of construction. In these (the Insulated Steel-American Rolling Mill house which we shall describe in a moment is an example) the walls are the structural members, being composed of light, strong, thin plates.

Neither structural strength nor volume of interior space is sacrificed. If the plates are made of steel, or a similarly strong material, window space need not be decreased.

It is believed by many builders (especially those who see a future for the mass-production house) that this type will almost entirely displace the Horizontal style in home building, because of the ease of setting up wall units and welding or clipping them together.

Sheet Steel House

At Solon, Ohio, last October, was completed an interesting housing experiment. Insulated Steel, Inc., built the house, in cooperation with the American Rolling Mill Co. of Middletown, Ohio. It is constructed entirely of sheet steel (of about the same thickness as a dime) welded together in large sections. Seventeen tons of steel were required.

The walls support the floors above

them, and the customary framework was dispensed with.

Large steel sheets, room-wide and story-high, welded together at the factory, were delivered at the site with window and door openings already in place. Channels two inches deep by six inches wide had been pressed in lengthwise, to give strength and rigidity.

Floors and roofs are made of long Z-shaped steel strips, like steps, which were overlapped along their lengths to form a series of metal boxes of great strength, and welded on the site. Engineers estimate that a floor of this construction could support 12 teams of horses.

After the first floor was in place, the lower wall sections were set up on it and welded to the foundation cap and floor. The second-story floor was placed on top of this wall, followed by the second-story wall, roof, and roof parapet.

"Two workmen," says *Nation's Business* for December, 1932, "using two torches and one welding outfit, handled the welding on the site. No special handling equipment nor scaffolding was required."

Finished exterior walls consist of a layer of board for insulation (which was fastened to the steel with a spirally threaded nail and sealed with structural adhesive) topped with porcelain enameled shingles.

The enamel finish does away with need for paint, and the upkeep is said to be negligible. Original luster may be restored by merely turning a hose on the exterior.

Gypsum board or lath covers the interior of the steel walls, and this material adapts itself to a plaster, wallpaper, or other decorative finish.

Houses of the Future

This is the first of a short series of articles on future trends in home building.

Present developments indicate that it may not be long before houses, like electric refrigerators, may be built in factories and distributed by specialty selling organizations.

Blocking of the hollow channels in the steel walls at frequent intervals served to increase the insulation.

Total wall thickness is only a little over three inches.

Ceilings are finished in acoustical tile and plaster, floors in hardwood (living quarters) and linoleum (kitchen and bath).

In appearance, the house is unique. It consists of two oblong sections placed at right angles to one another. There are no curves, and no overhangs or projections. The roof is flat. For beauty, it relies on the cream color of its shingles, and the pure functionalism of its architecture.

The house contains seven rooms, two baths, basement recreation room, double garage, and play space and solarium on the roof. It is equipped with an all-electric kitchen, air conditioning, and a wired moulding near the baseboard in each room to allow plugging in of appliances wherever desired.

The roof can be flooded in winter and used as a skating rink.

Automobile type windows (to be lowered with a crank) are used in the doors, with roll screens attached to the top of the windows to be pulled down whenever the windows are lowered. This obviates necessity for screen doors.

The finished house is highly fire resistant, and lightning, rat, and vermin-proof.

Cost is estimated as comparable to that for frame construction of similar type.

Appearance

How will houses built in this new fashion look?

Necessarily the style is one of plane surfaces and broad sweeps. Walls are thin, heavy masonry being replaced by sheet metal and insulation. Buildings are square or rectangular to conserve the greatest volume of space for interior use.

Roofs are flat. Sloping roofs were of value when carpenters could not build flat roofs that would drain properly or support snow loads. Now that these problems have been solved, builders with new ideas think there is no necessity for the slanting roof. And the fact that a flat roof may be used as solarium, recreation room, or porch is considered sufficient reason for its adoption.

Window space will probably increase greatly. With air conditioning, windows probably will be made a permanent part of the wall, not intended to be

opened, but merely to admit sunshine.

There are no applied ornaments, since the plane surface of the material used in construction is considered the finest decoration. The walls, however, may be colored. There are no overhangs or projections or gables to break the simple structural lines.

The finished house looks much like a shoebox, or a grouping of cubes; punctuated, of course, with windows.

Dymaxion House

Among the most startling and interesting of the new house designs is the Dymaxion House, conceived by Buckminster Fuller.

Mr. Fuller believes that houses should be constructed on a five-year replacement basis. Consequently his house is designed for quick assembly and lacks heretofore necessary elements of solidity and permanence. It does not even rest on the ground in the normal way.

The six-sided structure is suspended by cables from a central duralumin mast. "Based upon the principles of tension and triangulation," says Mr. Fuller in a recent article written for *Fortune Magazine*, "it is satisfactorily taut and as strong within its limits as a suspension bridge."

The house is really only one story in height, but its construction gives it three stories. Around the base of the mast and under the first floor is garage space.

The first floor contains all living quarters, each room occupying a segment of the hexagonal shape. Rooms are separated by sound-proof fabricated partitions. The roof above the structure is flat, and is used as an outside recreation room. A shelter is suspended over it from the central mast.

Almost every part is fabricated at the factory before being set in place in the architectural plan. The mast is made complete with all wires, plumbing, and other utilities, and is set in place first.

From its top hang the cables, suspending the floor beams of the first and second stories. Triangular floor plates already cut to size are then placed and covered with pneumatic flooring.

Pre-fabricated service units, such as bathrooms and kitchens are inserted and serve as structural units. Walls of these units form partitions. Most of the furniture comes already in place in these units, even the beds being built-in.

Exterior walls may be opaque, translucent, or transparent double-pane vacuum plates, but are universally windowless. The house is heated by the warmth generated from its illumination and power supply.

Appearance of the house from above shows the room partitions radiating off the central mast like the spokes of a wheel.

Mr. Fuller's description of the functions performed by the central mast is worth noting:

"Air is drawn in through vents at the top of the mast, conditioned, and circulated. Artificial light at night is provided in the central mast and diffused by prisms, lenses, and mirrors.

"Cooking, by an arrangement of vacuum mazda units, is enormously expedited and the drudgery of dishwashing is canceled by a device which washes, rinses, and dries dishes as they are inserted. Laundry is handled in the same way—articles being returned washed, dried, and ready-to-wear in three minutes.

"Dish closets, clothes closets, food closets (refrigerated and otherwise) are rigged so as to revolve at the instance of a photo-electric cell.

"Water is supplied either by artesian well or by truck transport—the quantity needed being exceedingly small. (A 10-minute atomized bath, for example, requires a quart of water or less, and the toilets, constructed upon the present airplane system, require none.) Cleaning, when necessary, is by compressed air units . . . Garbage is disposed of in an incinerator pocket."

The ease with which the house can be constructed, taken down, and transported, is one of the most frequently commended features of Mr. Fuller's plan.

New Materials

Countless new materials and products are pouring into the building market at this time. Not only are they making the housing revolution easier; but they are even forcing the change from old ways.

Steel is the best known of these new materials for home building, and seems to have the most promise for the future. It is adaptable for framing of houses, for walls, floors and roofs, for any other structural use. It has long been used successfully in combination with concrete. It can be welded easily. It is non-combustible, sanitary, shrinkproof, and rigid.

A house built of steel should be reasonably free from lightning menace, rats, and vermin. It is light in weight, but of great strength in proportion to its weight, and can therefore be used in thin sections supplanting thick masonry.

It can be fabricated easily in the

factory, handled without special equipment. Maintenance cost of a steel house which has been properly protected from the elements and sufficiently insulated should be low.

Disadvantages of steel are its comparatively high cost (best estimates give steel construction as 10 per cent higher in cost than masonry); the fact that although it resists fire, high temperatures will cause a steel frame to sag and collapse; and its tendency, with all other ferrous metals, to rust and corrode.

Steel men have been working hard on publicizing steel as the material of the future home. Prospect of using steel in house construction opens up a future steel market estimated as ranging from 1,875,000 to 3,600,000 tons per year. For this reason, more experimental work has been conducted on steel houses than on any of the other new types.

Asbestos, Porcelain

Besides the Solon house, two other steel houses have been erected in Cleveland recently.

Homes Permaesque of America, Inc., constructed a steel and asbestos house last year to sell for \$5,000, including site. The house has a steel frame, and factory-fabricated panel wall sections of rigid asbestos lined inside with air-cell asbestos insulation.

Architecture is conventional. The most noteworthy thing about this house is its low price.

Ferro-Enamel Corp. opened its all steel and porcelain house in Cleveland about the same time the Solon house was completed.

Before describing this house, it is interesting to note that porcelain enamel seems to have "arrived" as a material for house decoration and construction, both inside and out.

The trend in architecture to straight lines and plain surfaces has made it possible to adapt this material more easily to building than has been the case in the past.

Porcelain-enameled steel has the advantage of durability. It does not require paint, and washing will restore its luster. It can be had in various finishes, ranging from soft satiny effects to one with brilliant reflecting qualities.

Stippled effects are also possible, as are wood graining, marbling; and porcelain enamel may be made in any color of the rainbow. One insulation advantage develops from the reflecting qualities of porcelain enamel, which would aid in repelling the "radiant heat" of the sun on exterior surfaces.

Combined with steel, porcelain enamel provides the necessary non-corrosive house surface.

"To my knowledge," claims E. Hognson, executive vice president of Chicago Vitreous Enamel Product Co., "there is no other material available that can offer every possible color effect, a smooth lustrous surface (or dull finish, if desired), permanency, light weight (with its resulting saving in structural materials) and comparatively low cost."

The Ferro Enamel house has a welded steel frame and a porcelain enamel exterior. It was erected as an experiment in producing low-cost, mass-production houses, and to demonstrate porcelain enamel as an architectural medium.

The frame is of 4-in. channels, and is somewhat similar to the ordinary wood frame. Siding is "Ferro-Clad"—fiber insulating-board sandwiched between two steel sheets—covered on the outside with Ferro porcelain enameled shingles.

Made of 20-gauge steel, the shingles are vulcanized to roofing felt, and nailed to the Ferro-Clad in strips of six, to produce a weather-proof job.

Many novel uses for porcelain enamel have been found in the interior of the Ferro house. This finish is found on all lighting fixtures, electric switch plates, base-boards in the bedrooms, and cast-iron tile for the vestibule floor, the combination sink and dishwasher.

In addition, "Veos" porcelain enamel wall tile, manufactured in the plant of the Youngstown Pressed Steel Co., Warren, Ohio, has been used in the kitchen, lavatory, and bathroom.

The frame, windows (which are exceptionally large), and sheathing were fabricated in the Truscon Steel factory.

The roof is the usual sloping type. The porcelain enamel finish is cream-colored for the body of the house, bordered with green shingles below the roof and at the base. Shingles of the roof are rust-colored.

The house has eight rooms, garage, and combined porch and terrace. It is air conditioned.

Erection of the house was begun July 8. It required about five working days to complete the frame and apply the shingles. The shingles, which were made in the plant of the Vitreous Enameling Co., Cleveland, were applied to the walls and roof of the house and garage in five days.

The total time for erection was less than half that ordinarily required for similar type construction made in conventional materials. Cost was \$15,000.

IT'S A FRIGIDAIRE YEAR!

A GENUINE FRIGIDAIRE
FOR ONLY \$96*
USES NO MORE CURRENT
THAN ONE
ORDINARY LAMP BULB



THE NEW DELUXE ALL-
PORCELAIN FRIGIDAIRE
THE FINEST
ELECTRIC REFRIGERATOR
EVER BUILT

with Factory, Dealers and Salesmen working full time

We expected action. We expected enthusiasm. We expected orders. But the tremendous and enthusiastic reception of the new Frigidaire has exceeded even our most optimistic hopes.

We are literally swamped with orders and are working night and day to speed deliveries. Thousands of men are working on a full-time basis. And Frigidaire dealers and salesmen from coast to coast are working on a full-time basis, too—with orders that mean dollars in their pockets to show for their work.

What is the reason for this? Improved public morale? Certainly. But in addition

there is something about the new Frigidaires that has caused this flood of orders which indicates that again this is a "Frigidaire Year." Briefly here are the facts:—

Frigidaire Sets New Standards in Price—The first major manufacturer in the industry to engineer from the ground up a quality refrigerator designed and built to sell for less than \$100.

Frigidaire Sets New Standards in Economy—Nothing like it known before. Think of a refrigerator that

uses no more current than one ordinary lamp bulb!

Frigidaire Sets New Standards in Convenience—Automatic defrosting that saves time and trouble . . . Patented automatic ice tray release . . . Centrally located freezing compartment . . . Extra room for tall containers . . . A compartment for frozen storage . . . $\frac{1}{4}$ more food space . . . Adjustable food shelves . . . Interior light . . . Double Hydrator capacity.

Frigidaire Sets New Standards in Beauty—Distinctive style and

new beauty in cabinets. Deluxe Super Series models of Lifetime Porcelain inside and out. Standard models finished in gleaming Dulux, the finest of non-porcelain finishes. All models enhanced by chromium hardware. Stainless porcelain interiors.

Frigidaire Sets New Standards in Quality—Both Standard and Super Series Frigidaires are quality-built throughout. From top to bottom, inside and out, these new models all have the dependability that has made Frigidaire the first choice of more than 2,250,000 buyers.

*\$96 PLUS FREIGHT—INSTALLATION AND FEDERAL TAX PAID

FRIGIDAIRE

A GENERAL MOTORS VALUE

N. Y. UTILITIES WILL QUIT MERCHANDISING

(Concluded from Page 1, Column 4)

officially change their policies. Our companies therefore have been devoting their efforts to promotion of the idea of using electrically operated equipment for labor saving and time saving, rather than to sales campaigns.

"We have been cooperating with department stores, hardware dealers, electric dealers, manufacturers, in their sales activities. Through the Electrical Association of New York, we have endeavored to build up general cooperation in promotional effort and in furthering sales of appliances.

"Progress made on this cooperative basis of operations has been gratifying, and has convinced us that we can cease selling appliances and lamps after July 1. Our companies will devote their resources to promotion for the benefit of all dealers in electrical equipment.

"Our sales rooms will become demonstration stations; our advertising will sell the idea of using electricity, but will not endeavor to sell any specific type or brand of appliance. Our Home Economics Bureau will continue their valuable work.

"Our sales people will become promotional representatives. Our interest, which is to produce a larger use of electric current, will always assure our heartiest cooperation in the development of sound sales policies and practices."

FRIGIDAIRE COOLS BEER IN PHILADELPHIA CLUB

PHILADELPHIA — Philadelphia's Union League Club now has draft beer refrigerated by a Frigidaire beer cooler, according to J. J. Pocock, president of J. J. Pocock, Inc., Frigidaire distributor.

The beer is served from a specially designed bar in the grill room, which at one time was the bar room where Boise Penrose and other Republican chieftains of the Keystone state often refreshed themselves.

U. S. HERMETIC

ALL DEALER INQUIRIES FOR EASTERN, PENNA., NEW JERSEY AND DELAWARE, COMMUNICATE WITH COLONIAL STOVE CO., Phila., Pa.

Promoted



JAMES A. STERLING
Will manage Norge's advertising and sales promotion.

Engineers Will Meet In Chicago June 26

(Concluded from Page 1, Column 1)

Monday morning, June 26, in the Hotel Sherman. First session on "Current Problems," begins at 2 p. m.

First speaker will be C. T. Baker (Atlanta) on "Gas Engine Drives," followed by H. C. Guild (New York City) on "Condenser Design," and H. J. MacIntire (Urbana, Ill.) on "Brine Flow in Pipes."

Beginning at 10 a. m., Tuesday morning's session will be devoted to "Air-Conditioning Problems," with the following speakers: A. C. Willard and A. P. Kratz (both of Urbana) on "Domestic Air Conditioning," R. E. King on "Commercial Storage of Foods," and C. R. Neeson (Philadelphia) on "High Speed Conditioning Units."

Tuesday afternoon's session centers around "Thermal Problems," and includes the following speakers: W. R. Woolrich (Knoxville, Tenn.) on "Humidity and Heat Flow," L. A. Philipp (Detroit) on "Thermodynamics of SO₂-Oil Systems," and F. R. Bichowsky and R. M. Buffington (both of Dayton) on "Absorption Refrigeration with Solid Absorbents."

U. S. RADIO BUILDS 6 HERMETIC MODELS

(Concluded from Page 1, Column 3)

interior, flat bar shelving, 10-point cold control (on the outside of the cabinet), and broom-high legs.

Thermocell insulation is used in all models of the new line. Delco capacitor 1/4-hp. motors are used. The cabinets were designed by U. S. Radio & Television, and are manufactured by Rex. All models are defrosted by turning the cold control to the "defrost" position. McCord condensers are used.

Specifications of Models

Model HL-4 is the 4-cu. ft. model finished in lacquer. Model HP-4 is finished in porcelain. These refrigerators have 7.9-sq. ft. shelf areas. Their three ice cube trays supply 63 cubes at a single freezing. Lacquer model is priced at \$99.50, the porcelain one at \$114.50.

HL-5 and HP-5 are the lacquer and porcelain models with 5-cu. ft. net capacities. They will sell for \$129.50 and \$149.50, respectively. They have five ice trays which make 105 cubes at one freezing. Their shelf area is 10.1 sq. ft.

60 Distributing Outlets

The 6-cu. ft. lacquer and porcelain models are HL-6 and HP-6, priced at \$149.50 and \$174.50. They have a shelf area of 11.5 sq. ft., and their six ice trays make 126 cubes at a freezing.

The manufacturer now has 60 wholesale distributing outlets which operate on a restricted territory basis, according to company officials.

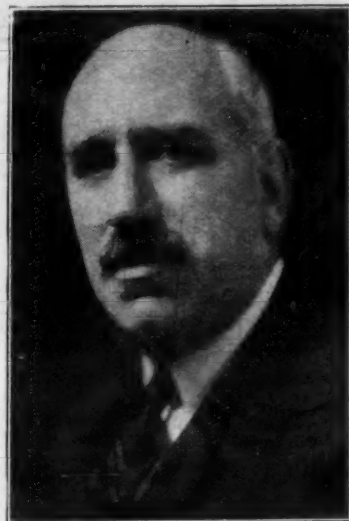
Grinnell Manufactures Bottle Beer Coolers

GRINNELL, Iowa—Grinnell Washing Machine Corp. announces development of a line of all-metal beer coolers to be known as the five star series beer bottle coolers.

The same refrigerating unit used in Grinnell electric refrigerators will cool the new beer coolers. Features of this refrigerating unit are its "Streamline" construction (all connections are electrically welded), General Electric capacitor motors, and spring suspension.

Cooler cabinet is insulated throughout. A new feature is an automatic "squeezee" that dries the beer bottles as they are taken out of the cooler.

York President Sets Up Commercial Division



WILLIAM S. SHIPLEY, president of the York Ice Machinery Corp., has just organized a commercial division to promote sales of commercial refrigerating units and air-conditioning equipment.

A group of 10 executives—whose combined service with the company totals 178 years—will direct the activities of this new division. C. A. Pearson has been appointed manager of the new division.

In each of the 10 branch offices, a supervisor has been appointed in charge of the commercial division. These supervisors will establish dealers in the cities in which the branches are located and will appoint distributors in adjacent territories.

Exclusive territories will be allotted to the distributors in which they, in turn, will appoint dealers to carry either the commercial refrigeration or air-conditioning line—or both.

Sales schools under the direction of the supervisor have been installed in each of the 10 branch offices.

All dealers will stock and display equipment but will not be required to install and service except in special instances.

In addition, the dealers will be aided by an aggressive merchandising plan consisting of advertising in general magazines and trade papers, newspaper and magazine publicity, direct mail advertising, sales bulletins, sales engineering manuals, and display installations.

WESTINGHOUSE TO START RADIO PROGRAM MAY 15

MANSFIELD, Ohio—On May 15, Westinghouse Electric & Mfg. Co. will launch the first of a series of spring-and-summer radio broadcasts, around which will be built a contest for all retailers and salesmen of Westinghouse home appliances.

The broadcasts, which will feature Everett Marshall, vocalist, and Al Mitchell's orchestra, will start two days after Westinghouse' current broadcast series closes. They will be made over a nation-wide hookup.

What Contestants Must Do

Dealers and salesmen entering the contest must do two things: estimate the total number of times the manufacturer's slogan, "Every house needs Westinghouse," is used during the new broadcasts and those now in progress; and write a 500-word (maximum) essay on "How I used the new slogan and radio program to sell Westinghouse."

Fifty-three prizes will be awarded in the contest. First three will be a Pontiac sedan, Plymouth sedan, and Ford sedan. Remaining prizes will be autographed copies of Octavus Roy Cohen's "Townsend Murder Mystery."

Contest Judges

Judges in the competition will be L. E. Moffatt, editor of *Electrical Merchandising*; Frank E. Watts, vice president of Bennett-Watts-Haywood Co.; H. M. Gansman, sales manager of Westinghouse Electric Supply Co.; J. F. O'Brien, advertising manager of Westinghouse Lamp Co.; and R. E. Imhoff, sales manager of the merchandising department of Westinghouse Electric & Mfg. Co.

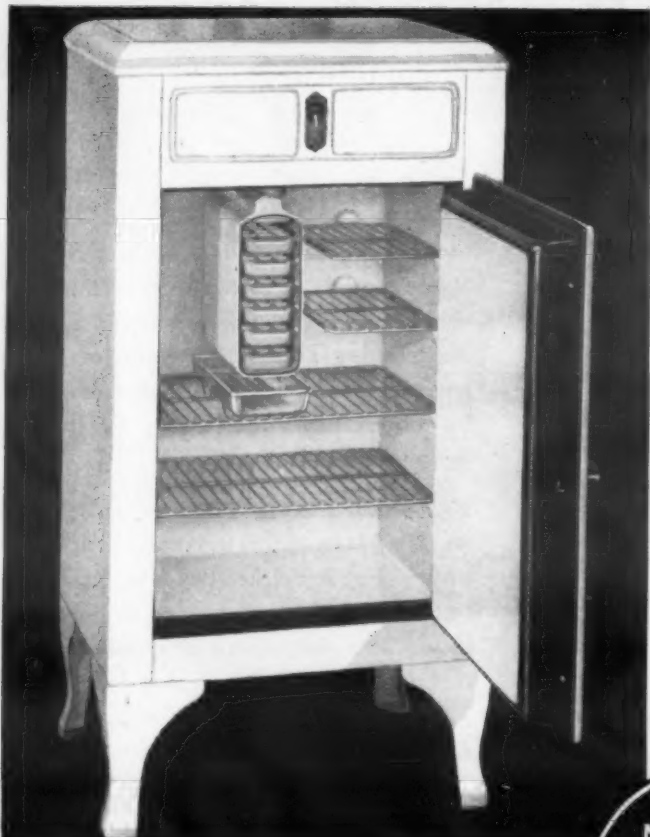
All slogan estimates and essays must be mailed to Mansfield before midnight of July 1.

Westinghouse is announcing a contest for the general public in one of its broadcasts this week. On May 22, this contest will close, and another one will be started, to close June 5. In each of these contests, 136 prizes will be awarded, Westinghouse officials state.

OUR ERROR

In the caption under the photograph on page 17 of the April 19 issue of *ELECTRIC REFRIGERATION NEWS* Virginia Smelting Co.'s plant was located at Norfolk, W. Va., instead of West Norfolk, Va.

Feature for Feature COMPARE THE QUALITY



*Priced for Today
Built for the Years*

Dollar for Dollar MEASURE THE VALUE

PPRICE is a big factor. Value is bigger. Combine the two and you have the profit opportunity in refrigeration for 1933!

U. S. Hermetic was the first genuine hermetically sealed refrigerator to be offered in a price range starting under \$100. It remains unchallenged in the extra quality it affords per dollar investment.

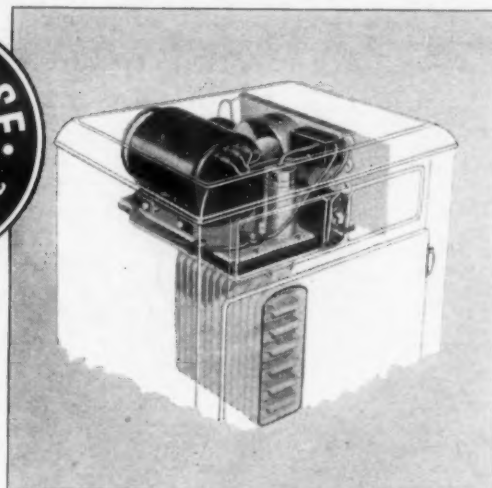
To you, Mr. Dealer, the hermetically sealed Roto-Pulse gives assurance of dependable operation... the elimination of service "grief"... profit on sales in 1933... the good will of satisfied customers in 1934!

There is no "price" leader in the U. S. Hermetic line. Every model is built to the same basic standard of quality. Every one embodies extra value features previously found only in far costlier refrigerators.

Back of U. S. Hermetic are the resources and guarantee of the United States Radio and Television Corporation—one of the world's largest builders of radio receivers. More value per dollar of price is the policy which built this institution. It is the policy which makes U. S. Hermetic an outstanding opportunity for dealers in 1933.

Let us send you complete information—so you may compare the quality and measure the value—by the strictest standards you know. Send the coupon or write, now—no obligation involved, of course.

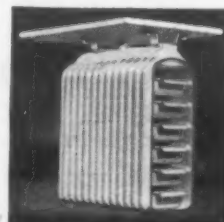
6
MODELS
\$99⁵⁰ UP
F.O.B. MARION IND.



The exclusive Roto-Pulse Unit is hermetically sealed, and has only three moving parts, including motor and compressor.



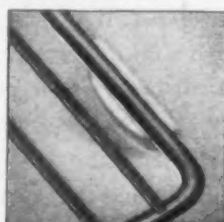
Ten-Point Cold Control, outside cabinet; also Safe D Froster, enabling defrosting without loss of refrigeration.



Porcelain Cooling Unit, compact, accessible, easy to keep clean. Abundance of ice cubes with every model.



4-Position Adjustable Door-Handle; hardware of distinctive design.

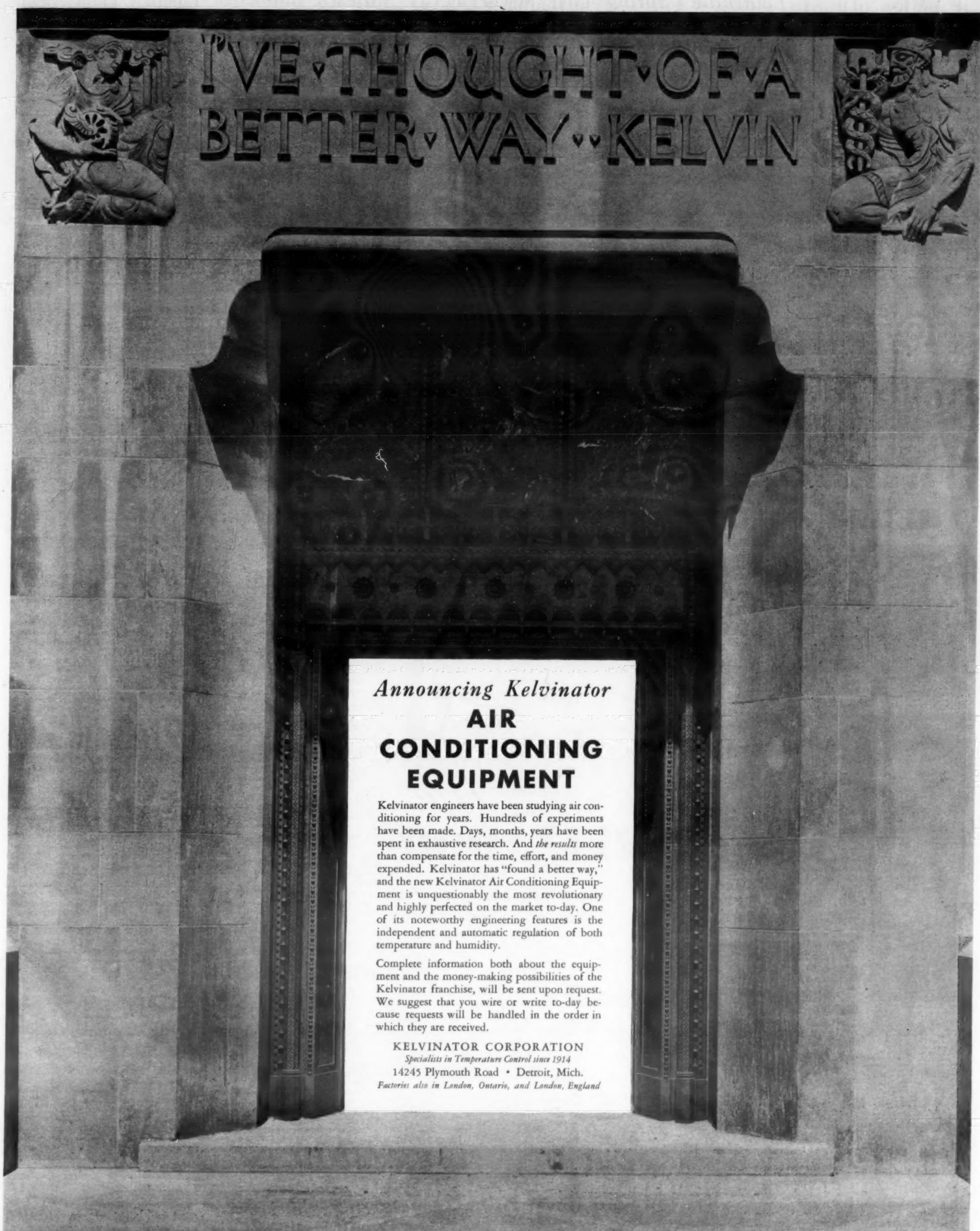


Shelf Supports Moulded in seamless porcelain interior; flat bar type shelves.

U. S. RADIO & TELEVISION CORPORATION MARION, INDIANA

Gentlemen: Without obligation to me, please send full details regarding the profit opportunity with U. S. Hermetic refrigerators.

Name _____
Street _____
City _____
State _____



I'VE THOUGHT OF A
BETTER WAY KELVIN

Announcing Kelvinator
**AIR
CONDITIONING
EQUIPMENT**

Kelvinator engineers have been studying air conditioning for years. Hundreds of experiments have been made. Days, months, years have been spent in exhaustive research. And the results more than compensate for the time, effort, and money expended. Kelvinator has "found a better way," and the new Kelvinator Air Conditioning Equipment is unquestionably the most revolutionary and highly perfected on the market to-day. One of its noteworthy engineering features is the independent and automatic regulation of both temperature and humidity.

Complete information both about the equipment and the money-making possibilities of the Kelvinator franchise, will be sent upon request. We suggest that you wire or write to-day because requests will be handled in the order in which they are received.

KELVINATOR CORPORATION
Specialists in Temperature Control since 1914
14245 Plymouth Road • Detroit, Mich.
Factories also in London, Ontario, and London, England

Kelvinator

231 UNITS SOLD AT PHILADELPHIA SHOW

PHILADELPHIA — Fifth annual electric refrigeration show sponsored by the Electrical Association of Philadelphia closed a week's run on April 22. The show, which was held in the Edison Building here, occupied two floors and displayed 12 makes of refrigerators.

More than 30,000 persons attended the show, which included several exhibits of electric ranges and water and beer coolers.

Sales from the floor of the show totaled 231 units, an increase over last year's sales, according to officials of the association.

Advertising used to publicize the show was placed in newspapers, on street cars and billboards, and announcements of the show were made by radio.

Makes of refrigerators shown and distributors participating in the show follow: Coldspot, Sears, Roebuck & Co.; Electrolux, Philadelphia Gas Works Co.; Frigidaire, J. J. Pocock, Inc.; General Electric, Judson C. Burns; Gibson, Louis Buehn Co.; Kelvinator, Raymond Rosen; Leonard, Klein Stove Co.; Norge, Trilling & Montague; Majestic, Peirce-Phelps, Inc.; Mayflower, Philadelphia Distributors, Inc.; Potter, Motor Parts Co.; Westinghouse, Elin Corp.

Concurrently with the Philadelphia show, the Electrical Association and local dealers sponsored an electric refrigeration show in Chester, Pa. A centrally located store site was utilized and more than 12,000 persons visited the exhibit during its week's run.

The 81 sales from the floor of the Chester show were in excess of those booked in the initial exhibit held in that city last year.

Louisville's Spring Show Attracts 25,000

LOUISVILLE, Ky.—Annual spring show of Louisville's Electric Refrigeration Bureau held in cooperation with the Louisville Courier-Journal and the Louisville Times, attracted a record-breaking attendance of more than 25,000 people.

The show was held in the old Post Office building which was vacated recently when the new Federal Building was completed. There were 19 exhibitors, each of whom reported more sales than at either the 1932 or the 1931 show.

Special sections were run by both newspapers, each issue containing a full-page cooperative advertisement sponsored by the 10 distributor members of the bureau.

Each of these page advertisements—part of the local bureau's 1933 advertising campaign for which a budget of \$5,800 was appropriated—contained names of the 10 refrigerators represented but not the names of the distributors themselves.

Large illustrations, specially posed by a University of Louisville girl, dominated the pages. Coldspot, Frigidaire, General Electric, Gibson, Grunow, Leonard, Majestic, Mayflower, U. S. Hermetic and Westinghouse were the refrigerators listed.

WESTINGHOUSE DISPLAY IN LEAVENWORTH SHOW

LEAVENWORTH, Kans. — Sickel Furniture Co., local Westinghouse refrigerator dealer, sponsored a booth showing the Westinghouse refrigerator line at the Annual Electric and Gas Appliance Show here, April 20, 21, and 22.

GOVERNOR SPEAKS AT DEALER CONVENTION

DES MOINES—A. A. Schneiderhahn Co., Leonard distributor in this area, made a notable occasion of the opening on April 25 of its new, enlarged headquarters here.

Two meetings of more than 350 dealers who retail the distributor's home appliance and automotive products, a banquet of the two groups, addressed by Iowa's Governor Clyde L. Herring, and a parade through the downtown streets marked the one-day program, which was presided over by A. A. Schneiderhahn, head of the company.

Mr. Schneiderhahn's banquet address was broadcast over station WHO and 36 other stations, as a part of the program in dedication of WHO's new 50,000-watt transmitter.

The dealer meetings, held in Hotel Savery, started early in the afternoon. The home appliance session was one of the series of retail schools being staged in key cities by R. I. Petrie, Leonard general sales manager; A. M. Taylor, merchandising director, and J. J. O'Neill, new-business manager of Refrigeration Discount Corp.

Another Leonard speaker was H. G. McGrath, Chicago district manager for the factory.

At 5:30 p. m. the meetings were adjourned, and the groups marched in a parade, headed by a police escort and the Legion Junior Drum Corps, through the business section of the city to the new headquarters of the distributorship.

Besides Governor Herring, speakers at the banquet which followed the parade were Lieutenant-Governor N. G. Kraschel, Attorney General Edward O'Connor, State Superintendent of Banking H. R. Bates, and Messrs. Petrie and Taylor.

Majestic Launches Regatta Sales Contest

CHICAGO — Grigsby-Grunow Co., manufacturer of Majestic refrigerators and radios, has opened a distributor salesmen's contest in which more than \$3,000 in cash will be awarded the winners when the contest ends on Aug. 15.

"Majestic Regatta" is the name given to the new contest. Points are to be credited on sales of refrigerators, radios, auto radios, tubes, and various promotional material sold to dealers by all men participating.

Bonus points are awarded for promptness in sending in reports, outstanding promotion of the contest by individual distributors, etc. Distributors are divided into 10 groups and prizes are to be awarded to winners in each group.

Each distributor is named after some outstanding college or university and has a "crew" entered in the regatta. Each crew has a captain who is responsible for promotion of the contest in his organization, and who is also eligible for one of the three national prizes to be awarded to the three leading crew captains.

Each crew is composed of the distributor's salesmen, who are known as "oarsmen." Contest is under the direction of A. R. Johnson, sales promotion manager of the Grigsby-Grunow Co. Mr. Johnson carries the title of "admiral." All correspondence and promotional material for the contest is in keeping with the official forms as used by the U. S. Navy.

470 NORGE UNITS TO BE PLACED IN APARTMENTS

NEW YORK CITY—Sale of 477 Norge refrigerators for installation in eight new apartment buildings of the Academy Housing Corp. here was made recently by the apartment sales division of Norge Corp.'s New York branch.

Branch officials claim that this is the largest single apartment installation made in New York City since 1930. The apartment buildings cover an entire block and are erected on the former site of the Classon Military Academy, overlooking the East River in the Bronx.

Approximately 2,200 occupants will be served by the Norges installed, according to David Rose, president of the housing organization.

Oregon Utilities Must Segregate Accounts

SALEM, Ore.—Complete separation of the merchandising activities of Oregon utility companies from the operating end of the business appears to be the aim of a supplemental order issued recently by Charles M. Thomas, public utilities commissioner.

The order is issued "to make effective a segregation of the accounting of the merchandising departments from their respective public utility functions and to charge to their merchandising activities all items of expense incurred in the merchandising of appliances."

It further states "no employee engaged in the regulated utility business shall perform any duties for the merchandising department, solicit or sell merchandise, or otherwise engage in jobbing activities, except the principal executive officers of the company."

Distributor Sells A-44 Norge for \$99.50

ST. LOUIS—Norge Co. of Missouri, Inc., St. Louis distributor, is selling the Norge model A-44 refrigerator for \$99.50 installed in this territory, and model D-66 for \$149.50 installed. First model has 4.44-cu. ft. net capacity, and the other has 6.62 cu. ft. of net storage space.

These are the two models of the 1933 Norge line which do not have the styled cabinets used in all other Norge models this year.

The distributor is advertising that "a solid trainload of Norge refrigerators have been delivered to homes in St. Louis since the introduction of the 1933 models." It is offering time payment terms of \$1.25 per week, and asks in its current advertising of present prices, "How long will these low prices last?"

DIETICIAN KITCHEN TO USE WESTINGHOUSE UNIT

LEAVENWORTH, Kans. — Every dietician kitchen in the new Veteran's hospital here is to have an AP-90 Westinghouse refrigerator, according to Fred Leach of the Columbian Electric Co., Kansas City, Mo., Westinghouse distributor. These machines are already in the building awaiting the opening of the hospital.

CAMDEN FIRMS SELL 128 UNITS AT SHOW

CAMDEN, N. J.—Third annual spring refrigeration show in this city was held on the sales floor of the Public Service Building April 19 to 22, sponsored by the Electrical League of South Jersey.

During the show 128 domestic refrigerators were sold. Sixty-five hundred persons attended the exhibit and each exhibitor received a prospect list of nearly 1,500 names of persons who do not own electric refrigerators.

Makes of refrigerators exhibited were: Kelvinator, Westinghouse, Norge, Frigidaire, General Electric, Coldspot, Majestic, Gibson and Mayflower.

Advertising for the show was carried on billboards, a radio broadcasting truck, newspapers, and car and bus cards. Invitations were distributed with the bills of the utility company, according to H. K. Suckling, secretary of the Electrical League and director of the show.

Actual cost of the show was as follows, according to Mr. Suckling: Newspaper advertising, \$495; invitations and stamps, \$35; radio broadcasting truck, \$72; other advertising, \$25; entertainment, \$450; door prize, \$150; miscellaneous, including printing, \$83. Total, \$1,310.

One half of this amount was contributed by Public Service Electric & Gas Co.

JACKSON BUREAU USES COOPERATIVE CAMPAIGN

JACKSON, Miss. — The Jackson Daily News is running every Friday, over a period of 12 weeks, a cooperative electric refrigeration page sponsored by the Electric Refrigeration Bureau of Jackson.

Dominating feature of the page each week is a cartoon strip, either 5 columns by 6 inches or 3 columns by 10 inches, setting forth the advantages of electric refrigeration and stressing the thrift angle.

The strip contains six panels, five of which consist of the cartoon illustrations, the sixth being devoted to a brief and convincing sales talk with the signature of the local bureau.

In each strip the "coin" trade-mark of the national bureau, with the slogan, "Invest in an Electric Refrigerator," is incorporated. Rest of the page is given over to articles on refrigeration, recipes for frozen desserts and the advertisements of local dealers.

The page is compiled and edited, in behalf of the Jackson bureau, by G. W. Godwin, advertising manager of the Mississippi Power & Light Co.

24 STATES, 11 REGIONS ENTER BUREAU CONTEST

NEW YORK CITY—Twenty-four states and all of the eleven regional divisions of the Electric Refrigeration Bureau are represented in the bureau's Legion of Honor Contest, entries for which closed April 22, according to George N. Brown, bureau manager.

The contest is designed to determine and reward the most meritorious accomplishment in co-operative refrigeration sales promotion and Bureau organization work in each of the regional divisions, as well as the most outstanding achievement in the entire country.

The judges, A. W. Berresford, managing director of the National Electrical Manufacturers Association; J. C. Sterling, advertising director of McCalls Magazine, and E. Kobak, vice president of McGraw-Hill Publishing Co., Inc., will meet this week at the New York office of the bureau to determine the winners.

100 Leonard Dealers Meet in Omaha

OMAHA—More than 100 dealers of the Auto Equipment Co., Leonard distributor here, attended the Leonard retail school held at the Parkstone Hotel here April 26.

The meeting was conducted by factory officials, R. I. Petrie, general sales manager; A. M. Taylor, merchandising director, and J. J. O'Neill, new-business manager of the Refrigeration Discount Corp.

Following the meeting, the factory group left for Denver to conduct the next school of the series.

1,400 SEE WILLIE VOCALITE IN CHICAGO STORES

CHICAGO—Approximately 1,400 persons saw the Westinghouse refrigerator line when Willie Vocalite, Westinghouse robot, gave performances in three Marshall Field retail stores recently.

The mechanical man, directed by his inventor, J. M. Barnett, gave demonstrations at Marshall Field stores in the Loop, Oak Park, and Evanston.

THERE'S THE FEATURE THAT

CLINCHES THE SALES



The SHELVADOR

U. S. PATENT 199922

This new and exclusive patented feature is the most sweeping victory in the field of electric refrigerator sales

The Shelvador doesn't need explaining. One glance and the story is told. What a show-room and show-window feature! With the Shelvador you're a mile ahead of competition. You have something every housewife wants in her new electric refrigerator or is sorry she hasn't in her present one.

Increases "Usable" Capacity 50%
Shelvador actually makes the "small" refrigerator "larger" by increasing the "usable" space. It saves the annoyance of "feeling around" for small, hard-to-find objects . . . puts them where they are easily reached.

Only Crosley Offers It

And remember—only the Crosley Electric Refrigerator can use the Shelvador; for it is an exclusive, patented Crosley feature. Insulation is not sacrificed in the Shelvador—the exterior of the door is extended to permit the use of a standard thickness of insulation.

In addition to the Shelvador, the Crosley Electric Refrigerator—famous last year for its trouble-free, service-free operation, has been refined in several points to make it even better. See your nearest Crosley distributor or write direct to factory.

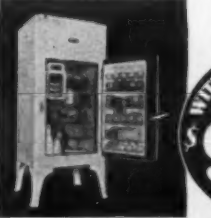
Here is the most sensational selling feature ever thought of in ELECTRIC REFRIGERATION . . . the most sensational advance in cabinet design since the first ice-box was brought out . . . a feature so self-evident, so new, so convenient and helpful that every housewife after one glance will say: "That's what I must have!"

MODEL D-35 NET contents — 3½ cubic feet. Shelf area—8 square feet. Overall Dimensions: Height, 50½"; Width, 23½"; Depth, 24"; Leg Height, 10½"; No. ice trays, 2; No. ice cubes, 42.



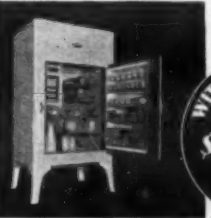
WITH SHELVADOR
\$89.50

MODEL D-45 NET contents — 4½ cubic feet. Shelf area—10.6 square feet. Overall Dimensions: Height, 56½"; Width, 23½"; Depth, 24"; Leg Height, 10½"; No. ice trays, 3; No. ice cubes, 63.



WITH SHELVADOR
\$99.50

MODEL D-60 NET contents—6 cubic feet. Shelf area—11.5 square feet. Overall Dimensions: Height, 57½"; Width, 29½"; Depth, 25½"; Leg Height, 10½"; No. ice trays, 3; No. ice cubes, 63.



WITH SHELVADOR
\$130

ALL PRICES INCLUDE DELIVERY..INSTALLATION..ONE YEAR FREE SERVICE

Montana, Wyoming, Colorado, New Mexico and west, prices slightly higher.
The Crosley Radio Corporation - Cincinnati
POWEL CROSLY, Jr., President. Home of "the Nation's Station"—WLW

CROSLY

Electric
REFRIGERATOR
WITH SHELVADOR
U. S. PATENT 199922

At last

A REFRIGERATOR LINE ON WHICH YOU CAN MAKE — *handsome* *net profits* —

COPELAND

— *yes, it's the new '33*



FEDERAL TAX PAID
FREIGHT TO BE ADDED

THE
L6

A LINE
that fills
every requirement
from
GREAT BEAUTY
to LOWEST PRICE

He can't offer more beauty and convenience. We doubt if he can offer as much in mechanical perfection as you can with the new COPELANDS. The reputation behind Copeland ranks with the best. Copeland pioneered and engineered many of the outstanding features found in electric refrigerators today. This year's models have reached the pinnacle of mechanical perfection.

To begin with, look at it. We don't mean its mechanics. They'll sell every time you demonstrate them. We'll come to that later. We mean ITS BEAUTY ALONE. What's inside . . . that is, all the revolutionary sound innovations and improvements . . . they'll close any sale you are attempting if you have to go that far.

But we mean its BEAUTY! Its appearance alone will turn every woman who sees it into a prospect. It has looks. It has evident, through and through quality. Among other refrigerators it stands out like a beautiful passenger car amid a display of trucks.

All this means easier selling; more selling; greater net profits.

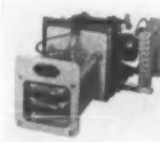
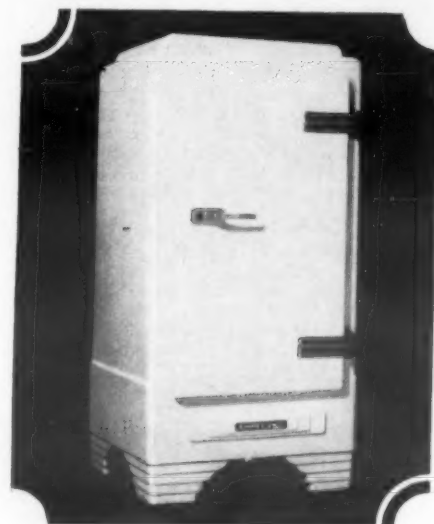
■ ■ ■

Here's Why the Greater Net Profits!

The new Copeland hermetic type cartridge unit, weighing only 74 pounds, is the greatest improvement since the first self-contained models combined cabinet and mechanical unit in one package. The compressor, including the motor, has ONLY three moving parts. The Copeland defrosts automatically and makes the entire cabinet a semi-hydrator.

About our advertising and dealer help plans! Send the coupon in today and we will put the entire story into your hands without delay, including complete disclosures as to our new dealer-favored franchise and its profit making features.

THE
W7



COPELAND
Leads in Engineering

COPELAND

Is Setting the Pace
for '33

■
Copeland's new type of sales franchise assures immediate profits for you without heavy investment or increased overhead.

■
Copeland's new beauty, styled for greater sales appeal, absolutely compels buying desire.

■
It's a brand new refrigerator, but it's backed by an old established company.

■
It's a line that meets every requirement from quality and appearance to low price.

■
"PRICE" with the L4, L5, L6
"STYLE" with the W7

MAIL THIS COUPON

COPELAND, Mt. Clemens, Mich.
Gentlemen:

I want to know all about the 1933 Copeland.
I have handled the following refrigerators:

Name
Name of Firm
Address

COMMENT

BY F. M. COCKRELL

The Freedom of Detroit

Until the recent banking unpleasantness, I have considered Detroit a first rate place to publish a trade paper and particularly suitable as a news gathering center for the electric refrigeration business. The trouble with New York editors is that they get to liking the city and forget that a hundred million of the U. S. citizenry live on the other side of the Hudson. In Chicago, there is a tendency for editors to get an inferiority complex about New York and become obsessed with the idea that they must champion the West against the East.

For a number of years Detroit has been so busy growing and selling automobiles that it has not had time to develop either its pride or its jealousies. If you want to do something new and different, Detroit is a good place to do it.

Henry Ford's Influence

In this town, Henry Ford has disregarded precedent, advice, and the established order, and has done it on such a large scale, that criticism of the new and the untold has become subdued.

Detroiters do not try to tell you how to run your business. Trade unions are not a factor. Business is not in the clutches of political grafters. If you pay your bills, you can get anything you want and do as you damn please. Which is more than can be said of most other large cities.

Since Detroit gained the spotlight by a bank crash which reverberated throughout every state in the Union and all over the world, it has not been such a good place for a calm appraisal of business conditions. Perhaps there is no such place, but I found it very refreshing to get the viewpoint of other communities.

Fred Healy of the Satevepost

At the elite Greenbrier of White Sulphur Springs, W. Va., I met highly successful classmate Fred A. Healy (University of Illinois, class of 1914), vice president and advertising director of the Curtis Publishing Co. Last year the *Saturday Evening Post* made a modest profit of six million dollars in spite of hard times and cut-throat competition among the national magazines.

When Fred was high-lighting the campus at Champaign it never occurred to me that he was destined to be the outstanding big business executive of the class. By the way, Fred got his start with Curtis as an advertising salesman for the *Country Gentleman* in the Detroit territory.

Knoxville, Tenn.

Last week my story hit the bottom of the page while I was telling about a night in Knoxville, Tenn., one of our stops on a 2,000-mile trip across the states of Ohio, West Virginia, Virginia, Tennessee, Kentucky, Indiana, Illinois, and Michigan.

Most of the leading makes of electric refrigerators sold in Knoxville including General Electric, Frigidaire, Kelvinator, Leonard, Norge, Majestic, Crosley, Westinghouse, Gibson, Mayflower, Copeland, Electrolux, Coldspot, and Cavalier. The Cavalier is made

by the Tennessee Furniture Co., located at Chattanooga.

The Tennessee Public Service Co. sells General Electric. C. M. McClung Co. is the Leonard distributor. Frigidaire is handled by the Woodruff Hardware Co., Westinghouse by Chapman Drug Co., and Gibson by Moncler's.

J. C. Moncler is chairman of the Knoxville Electric Refrigeration and Cookery Bureau whose new code of ethics was published on this page in last week's issue.

The coffee shop of the Hotel Farragut has six Frigidaire room coolers like the one in my office.

Government Money

Knoxville patriots are enthusiastically in favor of President Roosevelt's plans for spending a lot of money in the Tennessee river valley. The Cove Creek Development, only 25 miles away, is scheduled at \$5 million dollars.

It's a campaign promise, and if Franklin Delano doesn't make good, there's going to be hell to pay.

Knoxville ranks fourth as a flour-milling city, I was told. White Lily flour is made there.

Knox knit hosiery is a big industry. Underwear, sweaters, and other knit goods require a lot of Knoxville labor.

Marble quarries are another important source of revenue. The marble for the new Supreme Court building in Washington is from this city.

Briggs auto bodies are made here by the D. M. Rose Lumber Co. Furniture factories, dairies, coal mining, and other lines of business indicate that Knoxville is well diversified in its money making.

The Fulton Siphon Co. has a big plant on the outskirts of Knoxville. They make bellows and seals for refrigeration. Their first order was for the old Guardian unit which was the forerunner of Frigidaire.

Crossville, Tenn.

Crossville, Tenn. (pop. 1,500) is served by the Tennessee Electric Power Co., with headquarters at Chattanooga. The utility man said they sold 15 or 20 Frigidaires last year. Three units on the floor.

A thread mill in this mountain village gets its raw silk from Japan. The silk thread is woven into cloth at nearby Sparta.

A woodworking plant specializes on shuttles (for textile plants) which are made of dogwood. Another mill makes wood handles.

Hillbilly Racketeers

Running westward out of Knoxville in the direction of Nashville there is a nice new pavement which follows the top of a medium sized mountain range for about 50 miles. We passed roadside vendors who offered fox furs. Gullible city folks would naturally assume that the natives of the mountains were offering the fruits of their trapping skill and that a choice fur might thus be obtained without contributing to the profits of middle men.

We were not in the market for furs at any price but to satisfy my curiosity I pulled up at one stand where a girl was in charge. She immediately picked off several furs from the rack

and brought them to the car. I was surprised to find that they bore silk labels the same as in any city store. She explained that her father and mother did the finishing. Most of them were red fox.

"What is this one?" I asked, pointing to a black fur.

"That is dyed lynx," she said and then innocently added, "we caught that one ourselves. You see the red fox is out of season here and we have to get them in from another state."

Mrs. Cockrell examined two carefully and informed me afterward that the quality was very ordinary and that the workmanship was quite inferior. It was my guess that some Jewish boy from Eighth Ave., New York City, is peddling over this route. If I am wrong, perhaps some Tennessee reader will give us the lowdown on the fur business.

(Since returning to Detroit I have learned about a couple who bought a roadside fur for \$30.00. The vendor put it in a box and wrapped it carefully. Arriving home the buyers found the box empty.)

I am telling the story because it seems to be another example of the fact that racketeering, of one kind or another, has spread throughout the length and breadth of the land and into the innermost recesses of the country.

See America First

Instead of going on to Nashville we decided that it was time to be heading north again if Helen was to be back in Detroit in time for school Monday morning. In that direction lay Mammoth Cave, one of the seven wonders of the world, much touted by teacher and text book when I was a school boy.

Coming down through Virginia we had stopped to see the Natural Bridge so here was a chance to get caught up on our geography and do something instructive and educational for Helen's benefit. She wasn't terribly curious about it and by the time we arrived at the Mammoth Cave Hotel well after dark, all the responsibility for wanting to "see America first" was on my shoulders.

Capitalizing Floyd Collins

Along the narrow winding road which leads off the main highway to Mammoth Cave are billboards advertising Sand Cave where Floyd Collins was trapped under a falling rock. One sign announced that for twenty five cents "You may see Floyd Collins' body if you wish."

Those signs, recalling the newspaper stories which vividly recorded the futile efforts to free the trapped cave explorer, gave us that depressed feeling which one has on the way to a funeral.

Next morning we arranged for a guide and drove a couple of miles through the woods to a ravine where two new artificial entrances into the cave have been drilled through the rock. At these points the tenderfoot visitor may see some of the more interesting parts of the cave without walking miles underground from the natural entrances.

Constant Temperature

The enormous subterranean room, which we inspected first, is impressive enough although I expected to see formations of stalactites and stalagmites in greater profusion. The electric floodlighting is quite effective. The temperature is 54° F. the year around.

A concrete stairway of 150 or more steps leads straight down a rock tunnel into the second section which we visited. After following the underground trail for a mile or so we were willing to take the guide's word that there were 200 miles more of explored passageways in the entire network.

The piles of rock, which at some time past fell from the ceiling of the great caverns, were a continual reminder of the Floyd Collins tragedy. I found myself looking suspiciously at overhanging slabs which did not appear secure and felt inclined to hurry past such hazards.

Morbid Publicity

One jutting boulder about the size of a piano appeared to be ready to drop any minute. The guide assured me that it had been just like that for 35 years to his personal knowledge, but I kept thinking about Floyd Collins and the rock which pinned him down until he died of exhaustion.

The public had practically forgotten the Kentucky caves when the Collins publicity put them in the spotlight a few years ago. I had about forgotten the Collins story and did not associate it directly with Mammoth Cave.

Straight "reason why" advertising copy, which I read in the geography text book over 35 years ago, sold me on Mammoth Cave and made me a cash customer last month, but the Collins billboards gave us all the jitters. We were ready to be on our way as quickly as possible.

An All-Fried Breakfast

Breakfast at the hotel was the one bright spot of our Mammoth Cave expedition. It wasn't appetizing but it was funny.

"How do you want your eggs?" was the only question put by the burly colored waiter. He started to leave.

"Do you have orange juice?" Mrs. Cockrell asked.

"No, but I can squeeze 'em for you, if you want 'em that way," he offered.

After the orange juice came the most imposing assortment of fried food which the wife and daughter had ever witnessed. Fried eggs, fried ham, fried potatoes, fried apples, fried hash. The coffee was atrocious.

Whoever runs the Cave (it is owned by the State of Kentucky), has a lot to learn about selling it to the tourist trade of today. We were the only visitors in sight.

(Later.) In a radio address Monday evening Secretary of Interior Ickes mentioned that Mammoth Cave would soon become a part of the national park system.

Here's News—

Kentucky Banker Honored

At Elizabethtown, Ky. (pop. 3,000) I picked up an amazing piece of news. W. B. Minor, local manager of the Kentucky Utilities Co., told me that the citizens had gathered 200 strong the preceding evening to give a testimonial dinner to the town banker.

Will Montgomery, president of the First-Hardin National Bank, had served the community faithfully and well in that bank for 50 years.

After the national bank holiday Mr. Montgomery's bank promptly opened on a 100 per cent basis and so his fellow townsmen decided to give honor where honor was due.

It may be significant that Hodgenville, Ky., where Lincoln was born, is only 12 miles away.

I did not have the pleasure of meeting Banker Montgomery but I'll bet he knows the life of Lincoln from start to finish.

I formed a mental picture of a man who learned early to distinguish between right and wrong, a man who knows how to say "No" to any dishonest money-making scheme, a banker who did not go haywire when banking became a racket, one who still rates the character and record of the borrower more important than his collateral.

A Banker Story

Back in Detroit I told George Taubeneck about the Kentucky banker who was given a dinner. He told me one about another Kentucky banker.

According to his story a Detroit, driving down South, came to a lynching bee in progress alongside the road. Never having seen a demonstration of the celebrated southern justice, he stopped to witness the ceremony. To his surprise the noose was being put around the neck of a well dressed white man.

"We're stringing up the town banker," explained a member of the party.

"Good idea," enthused the Detroit, "how much money did he get away with?"

"No, we're not hanging him for that," drawled the Kentuckian, "but, you see, he tried to marry a white girl!"

Kentucky Utilities Co.

W. B. Minor informed me that his company has sold 56 General Electric refrigerators during the last five years. Sold two so far this season, one of them for cash.

"Who made the cash purchase?" I asked.

"The cashier of the bank," he said. (The more I hear about this Elizabethtown bank, the more I am impressed by the financial practices of the men who run it. If you are worrying about a safe place to put your money, I suggest you consider the First-Hardin National. They won't use it to play the stock market.)

The utility company had just switched from G.E. to Westinghouse, distributed in this district by Tafel Electric Co. of Louisville.

"Why did you change?" I asked Mr. Minor point blank.

"They tried to make us take on the entire line of G.E. appliances."

His reply indicated that anyone who tried to put pressure on him was through right there.

A Customer Lost

Note to sales managers: When you dope out a nice high-pressure plan for the field men to put over, give a thought to towns like Elizabethtown, Ky. (where money is safe in the bank and where business men retain their self-respect.)

There's a case of a good customer for five years (good pay, too, I'll bet) lost because of a selling idea which did not take into consideration that element of individual independence of thought.

Nothing wrong with the group merchandise idea or the product. It was the pressure which caused the resentment.

We had lunch at a corner drug store. A competent lady took keen interest in our order and prepared unusually delicious sandwiches. We bought two pairs of sun glasses for \$1.50.

An efficient young man at the Standard Oil station had put in 15 gallons of gas and a quart of oil, filled the radiator, oiled the generator cups, polished the windshield, and recommended the drug store.

While I visited the Kentucky Utilities store my wife sent a birthday telegram to an aunt, and Helen bought a pair of stylish sport shoes.

Confidence Returns

We had never heard of Elizabethtown before and had no preconceived notions about it but we instinctively liked the people and came away with feelings of satisfaction.

No silly traffic lights, good food, quality merchandise, courteous and substantial business men, bank open, no racketeers. We felt gay, carefree, happy. *Confidence had returned.*

If the whole U. S. A. were like Elizabethtown, Ky., it would be a good place to live in again.

Servel and Electrolux

At Evansville, Ind., on Saturday morning I found the Servel plant running full blast. F. E. Sellman, vice president, happened to be there for one of his visits from New York City.

He said the plant would also be working the following day (Sunday) because they are far behind on orders.

He mentioned that, just before leaving New York he had inspected the Electrolux exhibit before shipment to the World's Fair in Chicago. It will be surrounded by the exhibit of the American Gas Association.

Mr. Sellman put on his hat and gave me the benefit of a personally conducted tour of the Servel buildings. Everywhere the production lines were full, hundreds of machines moving along on their way to the shipping platform.

The advent of the new air-cooled Electrolux has opened up many additional sales possibilities. Farms, summer homes, and many localities where water supply is unavailable, inadequate or expensive, are now prospects for Electrolux.

Their market also includes territory where there are no power lines, since the unit may be operated by compressed gas easily obtainable in steel drums. Manufacturers of gas are actively promoting this new outlet for their product.

Servel Sells Uncle Sam

"We got the government contract again this year," said Mr. Sellman, pointing to a line of units tagged for Uncle Sam.

Passing through the stock room, Sellman waved at the wide open spaces between a few stacks of cases and remarked: "That's all the stock we have. It's going out as fast as we can make it."

In the offices, many typewriters were clattering and everybody appeared to be intent on getting a job done.

This was the first refrigerator factory I had visited during my 10-day trip. Here was confirming evidence that orders are coming in.

Servel volume is running ahead of last year. Sellman figures their sales will be about 20 per cent better.

Commercial business is better this spring. (We have noted with satisfaction similar reports from other manufacturers.) Sellman also stated that export orders are increasing.

Engineer C. H. Tanger informed me that Servel is doing a good business with the Humidraft, forced-draft cooler for butcher boxes.

The most popular sizes of Electrolux household refrigerators, he said, are 6 ft. (the best seller), 5 ft., 7 ft., 4 ft., and 3 ft.

In metropolitan areas the order of popularity is slightly different, running 4, 3, 5, 6, and 7 ft.

Servel makes a special cabinet called the Brooklynite for the Brooklyn, N. Y., market. It is 22 in. wide, the standard space allowed for the refrigerator in practically all Brooklyn apartments.

The Servel plant is the largest industry in Evansville. Other large employers of labor are the Mead Johnson Co. (baby food) and Igleheart Milling Co. (Swans Down Flour).

Mr. Tanger called my attention to the fact that Evansville is below the Mason & Dixon line. The colored population is segregated, with separate schools, movie theaters and restaurants. There are three sections of the city for colored residents. Total population (white and black) of the city, 105,000.

A new toll bridge now crosses the Ohio river into Evansville. (Later in the day we also crossed the Wabash river into Illinois on a new memorial bridge at Vincennes, Ind.)

Dealers Optimistic

The dealers and distributors with whom I had talked were invariably optimistic. None of them are looking for a boom or anything like a complete recovery from the depression. They all seem confident that conditions are improving.

In the meantime, they are selling to people who have jobs and people who have cash. In large cities and small towns, it is surprising how many people have cash.



Now Over 40,000 Larkin Coils in Daily Use

THE adequate refrigeration of old style, high ceiling Coolers is a problem solved best by the use of Model C LARKIN Original 100% Vertical Surface Aluminum Plate COIL pictured above. Comes in 11 sizes for Coolers 5x4' to 12x10'.

One of a newly enlarged line of 124 Standard Models and Sizes stocked for quick delivery to the trade from Atlanta, Brooklyn and Chicago. Special size Coils from Atlanta only.

WAREHOUSES
Brooklyn - Chicago

STANDARD FACTORY EQUIPMENT WITH

COPELAND : SERVEL : WILLIAMS ICE-OMATIC : CARRIER-BRUNSWICK-KROESCH : MAYFLOWER : UNIVERSAL : KULAIR : ZEROZONE : M & E : MODERN : STARR : MOHAWK : APEX : DICELER : LIBERTY : H. M. Robins Co., Export and Others.

LARKIN

Refrigerating Corporation

Originator and Manufacturer

ATLANTA, GA., U.S.A.

U.S. PATENT No. 1,774,235

LARKIN COILS

York Expands its Sales and Service Organization



In every industry there is a leader whose product becomes the measure by which the merit of all others is gauged. Public estimation decides its worth. It is not influenced by the manufacturer's claims. It must be earned by years of performance. It is the leader's unwritten guarantee.

Ability to meet the exacting demands of industry for the past half century is York's unwritten guarantee . . . a guarantee of quality and dependability behind every piece of York equipment.

That's why York Refrigeration and Air Conditioning are the universal preference and bear the unqualified endorsement of users everywhere . . . in gigantic cold storage and packing house as well as in the retail market . . . from the largest dairy and ice cream plants to the smallest dealer in dairy products . . . in the mammoth hotel, where food and comfort are provided for thousands, as well as in the smallest restaurant . . . from the vast department store down to the smallest specialty shop . . . in steamship and railroad transportation . . . in hundreds of industrial processes . . . wherever absolute dependability is the first consideration.

The art of building for this exacting duty is not learned in a day. It can be acquired only by systematic and cumulative progress . . . invention . . . design . . . research . . . development . . . backed by a steady faith in public judgment and the confidence that greater excellence brings its own reward.

Unparalleled service, too, is a tradition with York. Throughout the years York has developed a field engineering organization in which the user of York equip-

ment can concentrate full responsibility for the overall design and proper functioning of the completed plant . . . an organization reinforced with a wealth of data acquired in its many years of growth . . . an organization dedicated to the application of efficient, trouble-free refrigeration and air conditioning to every commercial and industrial need, large or small. Truly a rich background of experience.

And today, in order to keep pace with the ever increasing demands of rapidly widening fields of application in the smaller capacities, York is expanding its sales and service organization to include a limited number of distributors and dealers who are prepared to take advantage of the profit possibilities offered by either York Refrigeration, York Air Conditioning, or both.

York offers a complete line, engineered and built to meet today's demands . . . efficient . . . flexible . . . sturdy . . . automatic. Because of the wide range of capacities in which it is available there is no handicap in selling York equipment. The correct system . . . not a makeshift . . . can be offered for every installation. You can build good will, sales and profits on the name of York . . . a name which is recognized as a symbol of sound engineering, intensive research and integrity in manufacture.

YORK REFRIGERATION AND AIR CONDITIONING

The coupon is attached for your convenience. Use it now to secure more detailed information. There is still time to cash in on a York franchise this season. →

YORK ICE MACHINERY CORPORATION, YORK, PA.

Please furnish more detailed information on your plans for wider distribution of

- ☐ York Commercial Refrigeration
☐ York Air Conditioning

Name.....

Firm Name.....

Street.....

City.....

ELECTRIC REFRIGERATION NEWS

The Newspaper of the Industry

Published Every Week by

BUSINESS NEWS PUBLISHING CO.

Also publishers of REFRIGERATED FOOD NEWS (monthly) and REFRIGERATION DIRECTORY and MARKET DATA BOOK (annually) 550 Maccabees Building, Woodward Ave. and Putnam St. Detroit, Michigan. Telephones: Columbia 4242-4243-4244-4245

Subscription Rates:

U. S. and Possessions and countries in Pan-American Postal Union: \$3.00 per year; 2 years for \$5.00
Canada: \$6.00 per year (U. S. Money)
All Other Countries: \$5.00 per year
Advertising Rates on Request

F. M. COCKRELL, Publisher

GEORGE F. TAUBENECK, Editor
JOHN T. SCHAEFER, Engineering Editor
PHIL B. REDEKER, Assistant Editor
ELSTON D. HERRON, Staff Writer

HOWARD W. MATEER, Advertising Manager
GEORGE N. CONGDON, Business Manager
JOHN R. ADAMS, Production Manager

Member, Audit Bureau of Circulations
Member, Associated Business Papers
Copyright, 1933, by Business News Publishing Co.

VOL. 9, No. 2, SERIAL NO. 216, MAY 10, 1933

EDITORIAL AIMS

To encourage the development of the art.

To promote ethical practices in the business.

To foster friendly relations throughout the industry.

To provide a clearing house for new methods and ideas.

To broadcast the technical, commercial and personal news of the field.

Advanced Season

BANK holidays, combined with cold weather throughout a major portion of the spring, have retarded sales of electric refrigeration products this year. But during the last three or four weeks definite evidence has been produced that the heavy refrigeration selling season is under way at last. From almost all sales divisions of the nation orders are pouring into factories; workmen are being rehired; production schedules have been boosted again and again; shipping departments are getting behind; dealers are complaining that they can make sales but not deliveries.

Kelvinator Corp., as reported in the May 3 issue of ELECTRIC REFRIGERATION NEWS, shipped 30,116 units in April—which was the biggest month in the 19 years of the company's history. Previous all-time record was April, 1932, when 25,427 units were shipped.

Unfilled orders have accumulated so fast out on Plymouth Road that Kelvinator production schedules for May have been stepped up again.

Orders Pour Into Factories

Norge Corp. orders for the last six days of April reached 7,446 (see story on page 1), with a one-day peak of 1,475 on April 29. And in spite of the fact that 1,500 employees have been added to the production force, and that both Muskegon and Detroit plants are running to full capacity, the end of April found production 4,183 units behind orders on hand.

With orders continuing to roll in during the first eight days of May, Howard Blood, Norge president, reported yesterday that his factories were now 5,633 units behind.

Westinghouse Electric & Mfg. Co.'s April production schedule called for the manufacture of 4,500 electric refrigerators, as told on page 1 of ELECTRIC REFRIGERATION NEWS for May 3, with more than 10,000 orders remaining unfilled.

Employment Jump Precipitated

An increase of from 50 to 100 per cent in all General Electric factory forces as a result of the avalanche of spring orders is reported in the April 19 issue of ELECTRIC REFRIGERATION NEWS. P. B. Zimmerman, manager of the G. E. refrigeration department, stated then that shipments from the production line to the field were being made at the rate of one trainload per day.

In the same issue of the NEWS, Universal Cooler Corp. announced a new employment peak. Increases in sales of commercial machines and household refrigerators through department

stores necessitated the employment of more workers than ever before in the history of the company.

Plants Run On Multi-Shift Schedules

Frigidaire's roll call of factory workers totaled 6,500 April 5, 500 men having been recalled to make up a partial third eight-hour shift. E. G. Biechler, in the story on page 1 of the April 5 NEWS, stated that both Dayton plants were operating on a full production schedule.

Word now comes that Frigidaire's employment figure has jumped to 7,500 and that May production seems likely to be the largest in any one month since July of 1929.

Another front-page story in the NEWS this week offers the information that Crosley Radio Corp. has doubled the number of employees in its refrigeration department to take care of orders, which are approximately 100 carloads ahead of production. This newcomer to the refrigeration field is now turning out 500 refrigerators a day—which, as anybody in the industry will affirm, is no mean production rate.

Undoubtedly these actual-figures stories are as tangible proof of the industry's activity as anybody could ask. But we needn't rely on cold figures alone.

Staff Members Report Dealer Activity

During the last three weeks members of the ELECTRIC REFRIGERATION NEWS staff have been traveling far and wide interviewing dealers selected at random. F. M. Cockrell toured South, driving through Ohio, West Virginia, Virginia, Tennessee, Kentucky, Indiana, Illinois, and Michigan, stopping at many cities and hamlets en route, getting the "low-down" on dealer activity this spring. John T. Schaefer went East, into Pennsylvania, New York, and Massachusetts. Elston Herron went into the heart of Illinois, meeting the editor in Chicago. At present Mr. Herron is seeing small-town dealers in Michigan and Indiana, while Phil Redeker is doing likewise in Indiana and Ohio.

From every member of this itinerant staff comes reports that dealers everywhere are *selling refrigerators*, and selling them for cash! Almost all dealers interviewed declare that the last few weeks have shown a remarkable increase in sales.

Season May Be Prolonged

Dun & Bradstreet's financial agency reports that electric refrigeration is accounting for a heavy major portion of all sales recorded by electrical appliance wholesale and retail outlets.

Basing their estimates on records and predictions offered by field representatives, a number of sales manager have come to the conclusion that the present refrigeration selling season may be extended beyond its customary limits.

Until last year April or May generally marked the high point of the season and the beginning of the decline. In 1932 June, for the first time, was noted in the sales chart as a major month. Some sales executives are ready to believe that this occurrence may be recorded again in 1933; and that there is even a possibility of lessening the precipitate drop in the sales curve which usually is registered in July.

Post-Moratorium Reactions

Reasons assigned for these prognostications are many. In the first place, as indicated previously, bank holidays and late cold weather held the spring buying wave in check until well after Easter. As it continues to grow warmer, and as more and more banks open, the analysts think that those who might have bought earlier this year may be induced to come into the market in May, June, and July.

Too, loss of confidence in all sorts of financial agencies is setting people to thinking about the idea of investing in useful goods rather than trusting their money in the hands of others. Imminent probability of inflation—with consequent higher prices—is also releasing "buy now" urges.

Sentiment in distributing ranks of the electric refrigeration ranks seems better than it has been at any time during the last 20 months. If manufacturers can restep their thinking and their operations quickly enough to capitalize upon this new spirit, 1933 should be a good year indeed for the industry.

LETTERS

Majestic Sticks by Its Guarantee

Webster Refrigeration Service Co.
856 Marshall Ave., Webster Groves, Mo.
April 23, 1933.

Editor:

Regarding the note in your last issue of the NEWS from Grigsby-Grunow concerning guarantees, will they kindly state why they charged Mr. William Hoffman, 1925 Congress St., St. Louis, Mo., \$2.50 for a 15-minute service call when the guarantee has still two years to go?

WALTER RENE.

Grigsby-Grunow Co., Inc.
5801 Dickens Ave., Chicago, Illinois
May 4, 1933.

Editor:

In response to yours of May 1 with copy of a letter from Walter Rene, we cannot explain why a dealer should charge \$2.50 for service on a Majestic refrigerator which is within the guarantee period.

If Mr. Stoffman has a 3-year guarantee, he has recourse to us, and we suggest that he, or any other customer who finds that a dealer is not living up to our factory guarantee, communicate with us and he can be assured that it will be fulfilled.

J. F. DITZELL,
Assistant vice president and
general sales manager.

Operating Costs

Electrolux Refrigerator Sales, Inc.
Evansville, Ind.
April 24, 1933.

Editor:

My attention has been called to an article appearing in your magazine dated April 19. This particular article is called "Comparative Costs."

You state that "... Gas Refrigerators—with gas at \$1 per 1,000 ft., it is estimated ... that the cost of operation of a gas refrigerator would not exceed \$2 per month, or \$24 per year. There would be an additional charge for water for condensing purposes, where water is on a meter basis. I believe, for example, in New York City that it is figured at the rate of \$1 per month for the water used, or \$12 per year."

With gas at \$1.00 per 1,000 cu. ft., the gas cost will be \$1.80 per month or \$21.60 per year. Where water is metered, the meter reading is used in charging for water. Where water meters are not used and in example quoted naming New York City, under that condition the charges are not \$1.00 per month or \$12.00 per year, but \$2.50 for the year, the basis of charging being on a yearly basis and not on a monthly basis. Therefore, the total cost of the water-cooled Electrolux in New York City under the conditions enumerated by you would be \$24.10 and not \$36.00 as your article would indicate.

With the arrival of the air-cooled Electrolux, the gas consumption has been reduced roughly 15 per cent, making the total for gas \$18.36 and as no water is used, that item is entirely eliminated. It would therefore appear that from the article appearing in ELECTRIC REFRIGERATION NEWS that the cost of ice per annum would be \$39.00, the cost of electric refrigeration would be \$31.60 while that of the Electrolux water-cooled model would be \$24.10 and the new air-cooled Electrolux would be \$18.36.

Thought you might be interested in having the correct data.

F. E. SELLMAN,
Vice president.

New York and Richmond Gas Co.
Staten Island, New York
May 1, 1933.

Editor:

On page 2 of your issue of April 19 of ELECTRIC REFRIGERATION NEWS, I was greatly interested to note the paragraph entitled "Comparative Costs." However, I must take exception to some of the data which your friend (who insists on remaining anonymous) gives regarding the cost of operation of Electrolux gas refrigerators.

The usual domestic size of 5-cu. ft. capacity has a monthly gas consumption of 1,450 cu. ft. The 10-cu. ft. model has a monthly consumption of 1,900, so taking the estimated gas cost at \$1.00 per 1,000 cu. ft., it will mean that the 5-ft. cabinet would cost \$1.45, and the 10-ft., \$1.90, which is much less than the figures your friend quotes.

The data regarding the additional charge for water for condensing purposes is also incorrect. Insofar as New York City is concerned, the flat charge for water on the now obsolete Electrolux water-cooled refrigerator is \$2.50 per year, and as our Water Department is diligently checking up on consumption of water as used in these gas refrigerators, you can rest assured that the meter costs will be the

same as flat charge for yearly consumption. The new air-cooled Electrolux, of course, eliminates all water expense.

PAUL CELLIN,
Refrigerator sales department.

Warped Minds?

529 Arbor Rd., Yeadon, Pa.
April 25, 1933.

Editor:

I have read with a great deal of interest your comments and those of Advertising Director Duane Wanamaker relative to the shot-that-will-be-heard-round-the-world type of advertising Grunow will fire from behind the lines this season.

So far behind the lines is this latest blast that I doubt very much whether there are any "scared gentlemen" or "mastiffs added to the pack" of established manufacturers who fear that a loud roar will produce anything but the precipitation of a load of synthetic dynamite among its ranks.

The refrigeration industry is riding merrily on the wave of a public consciousness of a need for reliable refrigeration; years of earnest effort truthfully and intelligently directed, public acceptance and confidence, customer's good-will and satisfaction have developed a market which cannot and will not be upset by an upstart. This is true either from the customer's standpoint or from that of the manufacturer.

Someone's thinking has been terribly warped; Advertising Director Wanamaker has been instructed by Advertising Director Grunow to carry out his program. There is certainly nothing like loyalty to a person or an organization, but why warp everybody's mind?

SO₂, chemically named sulphur dioxide, (Mr. Wanamaker can verify the spelling by looking at the labels on various products—specifically here *Brer Rabbit Molasses*—where it is used as a preservative) is directly mentioned in their advertising. Have you seen what might happen if etc., etc. . . ? Here we are after all these years all wrong. Advertising Dictator Wanamaker, who evidently knows nothing about refrigeration, would do well to study suction pressures. I would suggest telling the *whole* story about their refrigerant.

Sorry to have taken your time and mine, but even if this isn't printed, I have the satisfaction of getting rid of a slight irritation.

The industry is large; it welcomes good competition as is shown by every one's attempt to increase its ice-making capacities and ice-melting capacities, and its quality. But, it wears large shoes and with the backing of millions of satisfied users it can *Trample*.

GEORGE T. STEVENS, JR.

Editor's Note: Mr. Stevens wrote this letter on plain stationery, but at the bottom he affixed a sticker with the words, "Hats off to the New Frigidaire."

Dealer Cooperation

Appliance Engineering Co.
701 Beacon St., Boston, Mass.

May 3, 1933.

Editor:

Thanks for your note of May 1. We are plugging along as usual with just about the same personnel and operation that we have had for the last few years. The cooperation that we gave our dealers brought us results when we changed over from Copeland to Gibson last fall, because most all our old dealers whom we wanted, changed over with us.

We have had a number of interesting commercial sales and have been further promoting our metropolitan dealer plan and have taken on more local radio broadcasting this year than before. Should any particular news items come up, I will be glad to send them in, in case they might make interesting reading.

Terry Junior still puts out an occasional "Naborhood News" and occasionally a school paper, but of late has been extremely busy in the construction of a club house . . . size approximately 5x5x5 ft., constructed principally of various good building materials obtained from the dump. He now claims he has the roof so it won't leak, but I think he is bragging.

E. A. TERHUNE,
President.

Porcelain Parade

Porcelain Enamel Institute
612 N. Michigan Ave., Chicago, Ill.
April 28, 1933.

Editor:

While we heartily agree with your editorial, "Opportunity of the Century," in your April 26 issue, we should like to point out that the following refrigerator manufacturers are exhibiting in the Porcelain Enamel Parade. This is in addition to those listed in your editorial:

Frigidaire Corp.
General Electric Co.
Grigsby-Grunow Co.
Norge Corp.

Inasmuch as these people are participating in A Century of Progress, I believe they would appreciate your adding their names to this list.

GEORGE P. MACKNIGHT,
Secretary.

ENGINEERING

FREON REFRIGERANT, WATER COOLING USED IN YORK'S MACHINES

By John T. Schaefer

YORK, Pa.—Designed especially for Freon as a refrigerant, new commercial machines of York Ice Machinery Corp. all have shell-and-coil water-cooled condensers built into the base of the machine and employ two-cylinder reciprocating compressors. The new machines are being sold through the newly organized commercial division of the company—which will also handle York's new cabinet and overhead types of air conditioners.

Machine Specifications

Smallest model in the new machine line is 422FW, with a bore and stroke of 2½x1¼ in. and driven at a speed of 375 r.p.m. by a ¾-hp. Century motor. Next is model 424FW with the same bore and stroke, but running at 500 r.p.m. and equipped with a 1-hp. motor.

Other new models are 426FW and 428FW both with a bore and stroke of 2½x2½ in. These have 1½- and 2-hp. Century motors respectively and run at 375 and 500 r.p.m. V-belt drives are standard.

Each of the new machines is equipped with Allen-Bradley motor starters and Minneapolis refrigeration controls. High pressure cut-out provision is made on all models, to cut out at 185 lbs. Water valves of the Penn Electric Switch Co. are used.

Balanced Seal Used

Design features of the new compressors include York's "Pressureflex" suction and discharge valves, and a new type of balanced shaft seal.

Suction and discharge valves are identical in construction, and consist of a Swedish steel disc, secured in the center by lock screws, and arranged to permit a gas flow around the edges of the disc.

The new shaft seal is made by two small-area rings with well-oiled, diamond-cut surfaces. Tension on the rings is set with the interior of the crankcase at atmospheric pressure, and designed to produce a balanced pressure automatically, York engineers claim.

Nickel Steel Crankcase

Crankcase is cast from electric-furnace nickel steel, and is cylindrical in design. Cast integrally with the crank is the "Centriforce" oiler which provides pressure lubrication to the thrust-bearing surface. Crankshaft is a heat-treated die forging, and rotates in two die-cast bearings.

Connection rods have an I-beam cross-section, the crank end containing a centrifugally cast babbit shell. A bronze shell forms the wrist-pin bearing. Cylinders are castings of electric-furnace nickel steel, fitted to the crankcase by machined dowels. Cylinders and heads are fitted to remove the heat of compression.

Diamond-boring tools are used on the crankshaft, connecting rod, and wrist-pin bearings. Wrist pins are of the full-floating type.

Belden Licenses Firms On Rubber Connectors

CHICAGO—Belden Mfg. Co. has licensed a group of wire products manufacturers to assemble and sell power supply cords equipped with any of the 17 types of Belden soft rubber connectors.

All of these connectors are produced in the Belden plant at Richmond, Ind., for their own use and for the following licensees:

American Steel and Wire, Anaconda Wire and Cable Co., Diamond Braiding Mills, Inc., Essex Wire Corp., General Cable Corp., National Electric Products Corp., Packard Electric Corp., John A. Roebing Sons' Co., Rockbestos Products Corp., U. S. Rubber Co. Canadian licensee is Vice-roy Mfg. Co., Ltd., of Toronto.

Frigidaire Men Address Dayton Engineers

DAYTON—Members of the Dayton Engineer's club heard two officials of Frigidaire Corp.'s air-conditioning department discuss various aspects of air conditioning at the club's regular meeting May 2.

F. C. Lyons addressed the engineers on the requirements of air conditioning insofar as human comfort and health are concerned, and the equipment's application in homes and business establishments.

R. E. Robillard discussed air conditioning as applied to railway car installations.

Beer Expected to Help Sales of Conditioners

PITTSBURGH—The return of beer should aid the sales of air conditioners, 1,200 members of a dozen local engineering and professional organizations were told recently by Charles D. Graham, air-conditioning engineer of the Westinghouse Electric & Mfg. Co.

The occasion was a meeting on air conditioning and an exhibit of air-conditioning equipment, held in the ballroom of the William Penn hotel and sponsored jointly by the American Institute of Electrical Engineers and by the American Society of Heating and Ventilating and other associations.

"Now that beer has been legalized," said Mr. Graham, "the nation is facing a period of intensified social activity. Many parties will be held during the coming summer in homes, restaurants, and rathskellers, with guests drawn by the magic of this beverage."

"Wherever people gather in large groups they will be more comfortable if the surrounding air is artificially conditioned to the proper temperature, humidity, and cleanliness, and is recirculated in proper quantity."

Equipment Sensitive to Changes

"Correctly designed air-conditioning equipment is sensitive to the presence of groups of people in a room and automatically functions to maintain the physical properties of the air at the point at which the human body is most comfortable," he continued.

"Other factors which affect the load on air-conditioning equipment are the number of electric lamps in the room, stoves, or other fires, hot food, and machinery," observed Mr. Graham.

"Also, physical action of people in the room has considerable effect on the 'quality' of air, as is shown by the fact that although the average person gives off only 400 B.t.u.'s when at rest, he gives off 900 to 1,000 heat units while dancing. A room in itself presents a number of varying factors to air-conditioning engineers," said Mr. Graham.

Building Construction a Factor

"The construction of the building, the thickness of the walls, the window area and the spacing of the windows are important factors. In the United States, if the windows face to east, south, or west, the load on the air conditioner is greater, because sunlight enters the windows."

"Also the load is greater on bright days than on cloudy days and varies with the amount of heat transmitted through the building's walls."

The meeting was also addressed by W. C. Goodwin, division engineer of air-conditioning equipment of the Westinghouse company. He spoke on the fundamentals of the conditioning of air and the factors governing human comfort.

"Conditioning air," said Mr. Goodwin, "means regulating the moisture content; cleaning, purifying, and removing odors; heating or cooling; and circulating it in proper quantities."

Comfort Zones

For example, during summer weather well regulated air-conditioning equipment will maintain air within the following zone or band: temperature, 64-79° F.; humidity range, 100-10 per cent; and air movement, 15-25 feet per minute."

The exhibit held in conjunction with the meeting consisted of air-conditioning equipment manufactured or distributed by local organizations. It included models for restaurants, shops, store windows, and similar applications.

The meeting was attended by members of the following organizations: American Society of Heating and Ventilating Engineers, Building Owners and Managers Association, Pittsburgh Motel Men's Association, Heating and Piping Contractors Association, Allegheny County Real Estate Board, Electric League of Pittsburgh, Architects Club, American Institute of Architects, and engineers of the Duquesne Light Co., West Penn Power Co., and Westinghouse Electric & Mfg. Co.

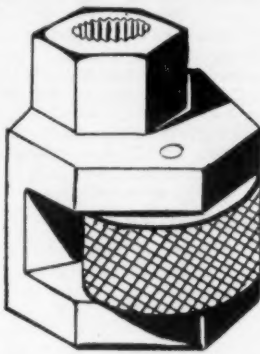
INDUSTRIAL REFRIGERATION BRINGS OUT DRAFT ARM

BETHLEHEM, Pa.—Industrial Refrigeration Co. here is preparing to manufacture a new draft arm for use with beer dispensing equipment, according to Harry A. Adams, Jr., of the manufacturing company.

The new product will be of conventional design and construction, and will probably sell complete to the wholesaler for approximately \$2.50 f.o.b. factory, Mr. Adams states.

New Stud Remover Developed

JACKSON, Mich.—National Machine & Tool Co. has just added a new stud remover to its line of refrigeration service tools. J. E. Dowley, general manager, explains that the tool is slipped over a stud, the knurled and



hardened hole in the tool forming a wedging action with the knurled eccentric roller.

Top part of the tool will fit a 15/16-in. standard hex socket, thus bring the leverage directly over the stud. As the eccentric roller wears out, it may be replaced by driving out the locking pins, Mr. Dowley states. Price of the tool is \$1.80.

NEW YORK ENGINEERS TALK ON ICE PLANT COSTS

NEW YORK CITY—Methods adopted by ice plants to overcome operating obstacles were discussed by S. J. Jones and J. Boon at the April 21 meeting of the New York chapter of the National Association of Practical Refrigerating Engineers.

HAY FEVER RELIEVED BY AIR CONDITIONING

(Concluded from Page 1, Column 1)

tein clinic of Johns Hopkins, Dr. Gray said. In the room selected for the tests were placed four beds, chairs, other ward room equipment, and a Frigidaire air conditioner.

During the entire series of tests, the room's temperature was held at approximately 10 degrees under the outdoor temperature, and the humidity was reduced considerably. Said Dr. Gray:

"On different days, groups of 10 patients were sent to this room and observed to determine the effect on their symptoms. In the individuals suffering with symptoms of hay fever uncomplicated by asthma, a striking change was noted in from 10 to 15 minutes."

"Within an hour the symptoms had entirely subsided, and after two hours the individuals . . . had no evidence of hay fever. These patients then were returned to the rooms of the clinic without artificially conditioned atmosphere."

"Within 15 minutes, symptoms developed and in an hour these patients 'Patients who had pollen asthma suffered for the first 15 hours with moderate wheezing; however, the symptoms were quite mild compared with the hours of discomfort previous to admission to the air-conditioned atmosphere."

"After 36 hours, these patients slept comfortably throughout the night and, although coughing occurred occasionally, the result of this measure was most satisfactory."

Dr. Gray told the society that each were as miserable as when they first came into the room," he said.

"The patients who had ragweed hay fever improved rapidly on admission to the room, and within an hour were

free from symptoms. They experienced no discomfort whatever for the period of 48 hours during which they were confined to the air-conditioned room," Dr. Gray continued.

time the patients were sent into the outside air, their symptoms returned rapidly.

Relief of patients by placing them in an air-conditioned room depends primarily upon cleansing the air, and secondarily upon the cooling of the air, the doctor stated.

Patients suffering with bacterial asthma, Dr. Gray found, could not be helped by the air-conditioned atmosphere. When brought into the test room, their symptoms became even worse, and they were finally discharged in greater discomfort than when they entered the place.

Dr. Gray's closing remarks were these:

"The experiments in the treatment of pollen hay fever and asthma with air-conditioned atmosphere represent a new method of attack. For individuals who can make provision for such atmosphere, whether in their homes or offices, great relief can be offered."

Results of these experiments are published in the issue of the Journal of the American Medical Association which came off the press May 6.

Geuder, Paeschke, Frey Buys Cooler Firm

MILWAUKEE—Geuder, Paeschke & Frey Co. of this city has purchased the Perfection Cooler Co. of Michigan City, Ind., and will operate the business of the latter organization as the Perfection Cooler and Dispenser division, according to Charles Paeschke, Jr., vice president and secretary of the Geuder company.

During the past year, the Perfection Cooler Co. was operated under a receivership. By order of the court, the receiver's assets were ordered sold.

A FACT THAT 10 YEARS IN THE REFRIGERATION INDUSTRY HAS TAUGHT US

When Low Price is Justified . . .

Low price is justified only when it permits of good quality and reasonable profits. For any other reason and particularly for the purpose of driving out competition it is pernicious and will inevitably produce destructive reactions. This is proved by the history of American business. Good competition is wholesome. It should be welcomed.

UNIVERSAL COOLER CORPORATION
DETROIT, MICHIGAN BRANTFORD, ONTARIO

MANUFACTURERS OF A COMPLETE LINE OF HOUSEHOLD AND COMMERCIAL REFRIGERATION EQUIPMENT

BY JOHN T. SCHAEFER - -

Wanderlust

Here in Detroit it has been hard to tell just what effect the advent of legal beer will have on the refrigeration industry, due chiefly to the tardiness of the Michigan legislature in laying down rules for beer selling. This in spite of the fact that Michigan was the first state to ratify the 21st amendment.

Not that beer hasn't been sold in our home state, but until this week it hasn't been sold on an above-board basis in places that would answer the questions of your inquiring reporter.

Detroit manufacturers of commercial refrigeration equipment (Cope-land, Kelvinator, Universal Cooler) know full well that beer is back in many states, of course, from the large orders for machines and coils from out-of-state distributors.

Best way of studying the new beer business was to visit some of the Eastern states, where the beverage is now flowing freely. And that is just what I did last week, calling on refrigeration dealers and distributors, manufacturers, and a number of beer-vending establishments in New York, Pennsylvania, New Jersey, and Massachusetts.

First-Rate Beer News

Perhaps my best informant was Manager-of-Commercial-Sales Cook at the New York branch of Frigidaire. He has some 50 commercial salesmen working on beer prospects in the Metropolitan New York area, and their results are keeping the management

in a happy frame of mind. Average sale of a beer-cooling installation has been around \$800, he says, and sales have been plentiful.

Best prospects for beer-cooling equipment have been high-class restaurants, with well-established clientele and enough capital to invest in electric refrigeration, he says. Good prospects also are hotels, chain restaurants, and grills. Installations of beer coolers are revealing new prospects for other commercial equipment, Mr. Cook finds. And that works both ways.

New York's toney speakeasies or "clubs" which serve good dinners in connection with their liquor will probably continue under the new laws, and are usually good credit risks. Small hole-in-the-wall speakeasies seem to be losing out and will eventually pass out of the picture completely in favor of the law-abiding places, Mr. Cook thinks. Obviously the latter are hardly worth cultivating in view of their doubtful credit standing.

On 44th St., New York City

Le Bourget's restaurant on 44th St. has a neat installation of Frigidaire beer-cooling equipment—a model TT12-CC high-speed draft-beer cooling unit operating with Frigidaire condensing units (in the basement) which also serve the food refrigerators in the place. It's a good big restaurant, new and clean, and was thoroughly crowded the night we went there for dinner.

Since beer has been served the aver-

age check has gone up 15 cents, the proprietor says. Lunches list at 45 cents, table d'hôte dinners at 65 cents. Locally made beer sells for 10 cents a glass, 15 cents a bottle.

The bar is installed in a rear corner of the main floor. It was a busy place with a continual stream of waiters which practically eliminated standing beer drinkers. The bar fixture, incidentally, was a product of Gardner Nelson Co. of Long Island City, N. Y., a company which has furnished a number of fixtures for installation with Frigidaire beer coolers in the New York territory.

Another model installation in the city is that in the Grand Bar & Grill, just west of Seventh Ave. on 42nd St. Here are two Frigidaire TT12-CC coolers, from which some 40 barrels of beer are drawn each day.

Competition

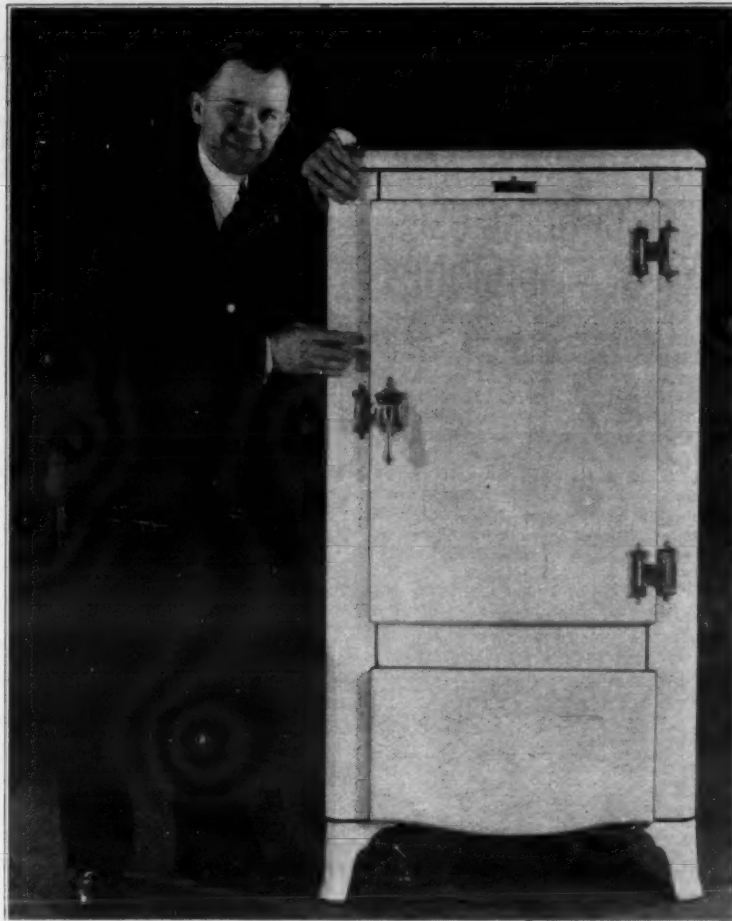
Ice refrigeration is important competition for beer-cooling business, Mr. Cook admits. This is due largely to the lower investment and partly to prejudice or favoritism of old-time bartenders. Frigidaire now has two men contacting New York brewers, educating them to the advantages of electric refrigeration.

A strong argument in favor of electric refrigeration for beer is its uniformly low serving temperature (40° to 45° F.). Beer served around 55° leaves the draft arm with such force (due to increased activity of its carbonic gas content) that each glass gets too much foam, Mr. Cook points out. Wiping off the foam and refilling will cause a waste of 15 glasses or more per barrel, he declares, a loss that is negligible with 40° beer.

Tightening Up On Credit Terms

Frigidaire's New York branch is now tightening up on credit terms,

Trupar's Chief Engineer and His Product



F. C. Geiler of Trupar seems proud of his 1933 Mayflower refrigerator.

raising the minimum down payment from 10 to 20 per cent. The management hopes competitors will all cooperate in the movement.

Bar fixture suppliers have not been forced to the too-generous terms of refrigeration firms, according to Mr. Cook. They require at least 30 per cent down and give only eight or ten months to pay.

Beer at Any Price

It was interesting to note, in my various roamings around New York City, that beer seems to be priced to suit anybody's pocketbook. "Open-door" places, which have grown up all over the city to serve orangeade, pop, and what-not, offer a glass of beer for five cents.

In most restaurants it was advertised for 10 cents a glass, and 15 or 20 cents a bottle, while some of the expensive restaurants and hotels offered German Pilsener and out-of-town brews for 25 and 35 cents a bottle.

Not even New York has its permanent laws anent beer selling (they're due for passage June 1), but that hasn't daunted New Yorkers. Fact is that beer is being sold in all sorts of places—many with improvised makeshift cooling equipment which is likely to be replaced with real electric beer coolers when the law is defined.

About the only legal limitations New Yorkers are sure of are these: only 3.2 per cent beer will be permitted, and brewers will not be allowed to subsidize retail outlets handling their beer.

New Jersey Cautious

Over in New Jersey, there seemed to be a little more hesitancy about jumping into the business before the law is settled late this month. A good many hotels and restaurants have taken out temporary permits to sell beer in Newark, but others are marking time. Temporary license for a restaurant costs \$75, for a soft drink parlor \$20.

Manager of the St. Regis restaurant, across from the H. & M. terminal, reports a definite increase in business due to beer. Most men now have a glass of beer (10 cents) with their meal instead of a cup of coffee (five cents), and frequently a second glass. Bottled beer is 15 cents a bottle.

This restaurant uses its large Frigidaire box in the rear to keep half-barrels cool until they are put on draft in the bar fixture. When the bar runs dry, a half-barrel is rolled up from the rear and placed in the bar, whose draft arms are refrigerated by packed-in-ice coils.

At the Robert Treat

In the same block is the Robert Treat hotel where we always go for one meal, at least, in Newark. Beer is being sold in both coffee shop and main dining room. Rates—15 cents a glass, 25 cents a bottle. No additional refrigeration was needed to handle the new drink, the existing central hotel system being ample. Only change necessary was installation of a new beer-cooling coil in the coffee shop's fountain fixture.

The matronly cashier in the coffee shop says business has improved since beer came in. Individual checks are larger, and there are more checks. She attributes this to a returning prosperity as much as to the appetite-whetting qualities of beer.

Beer-sellers in New Jersey are disturbed by the clause in the temporary law which prohibits the sale of beer on Sundays, and are agitating for its removal.

The newspapers were full of discussion on the subject, and when I left it looked as though the restriction would not be included in the permanent rulings. That clause is too easily circumvented, one restaurant owner pointed out, by the restaurateur who gives the beer away free on Sundays—with an extra-charge dinner.

Forest Hills, N. Y.

Out in Forest Hills, N. Y., one of Long Island's beautiful villages, beer was prominently advertised in several restaurant billboards. One place in particular seemed to be doing a land-office business. This was an "ale house" with a clear-glass front, with a bar and high stools all around.

My companion that night was a young lady who does not like beer, so further details are not forthcoming. This much was evident: their store was laid out expressly to sell beer; it was selling lots of beer; it was a clean, high-class establishment; its patrons were having a fine time, but were not at all rowdy; it was open late at night.

Just how "misleading advertising" might be defined is beyond the scope of the engineering editor. But these advertisements of "4 per cent beer" smack of something not quite fair. Legal beer has an alcoholic content of 3.2 per cent by weight; a number of vendors advertise 4 per cent beer, but conveniently neglect to mention that it is 4 per cent by volume and is no stronger than any other 3.2 beer.

'All Aboard'

For Some Short Hops

Included in my itinerary of the week were Waynesboro, Pa. (Frick), York, Pa. (York), Newark (Carrier), and East Springfield, Mass. (Westinghouse). Some of these towns were pretty hard to get to and from by railroad, but worth the trip because of the important companies in them.

Down to Waynesboro, for instance, you get a train to Harrisburg, then another (all coaches) to Chambersburg, and finally catch a bus from there to Waynesboro. Flanked by a chain of the Appalachian mountains and steeped in history, Waynesboro and its surrounding country is mighty interesting territory for a nature lover.

A Visit to Frick

At the Frick Co., William Aubrey, sales manager, and Terry Mitchell, advertising manager, are the cordial hosts. Having taken the Frick student course shortly after his graduation from M.I.T. and worked in several of the Frick shops, Mr. Mitchell is familiar with most of the manufacturing operations and could answer all the questions I could think of ask.

Together we watched molten iron being poured in the Frick foundry, the wood-working shop in action, Flakie machines and Kold-Kan systems in the course of production, and a number of large vertical enclosed compressors being built (probably for brewery refrigeration). Just the week before, one of Zartochenzeff's quick-freezing systems had been shipped up (Concluded on Page 13, Column 1)

FEDDERS saw it coming

2 years ago

And Began Building and Selling Electrically Refrigerated BEER COOLERS

FEDDERS REMOTE BEER COOLERS

One Spigot Models. Capacities 8 to 33 Gals. per hour based on 15° Temp. Drop.

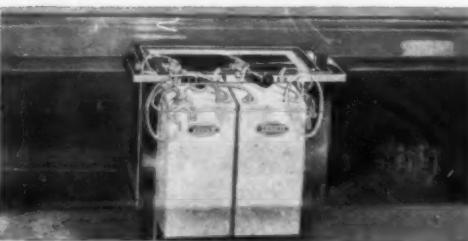
Two Spigot Models with or without water faucet. For use with two kegs or light and dark beer.

FEDDERS MOBILE TAP

Holds ½ barrel. Also has refrigerated bottle compartment. Complete with built-in High Side.

FEDDERS BOTTLED BEER COOLER

A complete self-contained cooler for 12 oz. bottles. No Ice, No Water, — bottles and labels remain clean and dry. Shown with cover removed.



Phantom view showing installation
FEDDERS SELF-CONTAINED COOLING COILS FOR OLD AND NEW BARS

In spite of the fact that we didn't know whether we would ever get Legal Beer back, we had the courage to spend thousands of dollars on engineering and development work on beer cooling equipment. In the long process of designing and testing we learned what to do and WHAT NOT TO DO. They were the kind of things that could not be discovered in a minute. Finally, we built and sold beer coolers. They went into actual use.

We did NOT have to RUSH into Building Beer Coolers OVER Night WHEN LEGAL BEER CAME BACK FEDDERS WAS READY. Fedders Beer Coolers had already met every test of time and service. We did NOT have to rush into the beer cooling field over night. There are no "Bugs" in Fedders Time Tested Beer Coolers.

Prompt Deliveries on a Complete Line

During the past two years we learned what different types of beer coolers were wanted. We were the first to pioneer the complete self-contained MOBILE TAP for keg and bottled beer. We developed a complete line and when Legal Beer came back we simply stepped up production. Today we are making prompt deliveries, —in fact immediate deliveries on many models. The illustrations at the left show a few of the many Fedders models. The coupon will bring you the latest catalog giving complete specifications and capacities.

PATENTS PENDING

FEDDERS MANUFACTURING CO.

57 Tonawanda Street Buffalo, N.Y.
New York Office
116 Broad St., New York City
Pacific Coast Office
923 East Third St., Los Angeles, Calif.

Kindly send me your latest catalog of Fedders Time-Tested Beer Coolers

Name
Concern
Address

BY JOHN T. SCHAEFER - - -

(Concluded from Page 12, Column 5)
to the fish-freezing regions of Cape Cod.

Frick Entering the Small Machine Field

Newest addition to Frick's complete line of refrigerating apparatus is the series of methyl chloride commercial condensing units (announced in the April 12 issue of *ELECTRIC REFRIGERATION NEWS*). Sale of the new machines will be handled by Frick's far-flung organization of branches and distributors, under the direction of Mr. Aubrey.

Engineering is in charge of Frank R. Zumbro, chief engineer. The small-machine specialist of the engineering department is Frank Shenton, with whom I enjoyed a lunch recently in Detroit.

A fast nerve-racking bus ride over the mountains that night brought me to York, Pa., home of York Ice Machinery Corp. York men are all keyed up to the possibilities of their new Freon commercial machines and air-conditioning equipment for homes, offices, retail stores, etc. (announced in last week's issue of the *News*), and have organized a new commercial division to handle sales of these products.

York's New Set-Up

C. A. Pearson, former manager of Lipman's New York office, heads the new commercial division. Design and application engineers are French Denison, one-time chief engineer for Lipman in Beloit, Wis., and Henri Bryselbout, who recently left Copeland's engineering department in Mt. Clemens, Mich., to join York.

Here I met, for the first time, R. J. Hilliker and J. D. Smith of the sales promotion department—men with whom we have corresponded regularly in reporting York activities in columns of the *News*.

Third and fourth floors of one of York's factories have been completely re-vamped for manufacture of the new Freon machines, and production is now under way.

Hospitality at Carrier

Distributors and field men of Carrier Products Corp. were meeting during my Newark visit, transactions of their sessions being chronicled in the last issue of the *News*.

Herbert Laube, field representative, Brewster Beach, advertising manager, and J. M. Bickel, merchandising manager, made me feel at home, and offered any information desired about Carrier operations.

Carrier Products Corp. is the organization which is now selling small air-conditioning systems and commercial refrigeration through a distributor set-up. Carrier Engineering Corp., through its factory branches and agents, will continue to handle the industrial refrigeration and large air-conditioning plants which include installation as part of the contract.

3 New Air Conditioners

Three new air conditioners were introduced during the conference—a new induction type Store Weathermaker, an overhead Store Weathermaker, and a self-contained Room Weathermaker. First-mentioned of these was described and illustrated in the last issue of the *News*.

The overhead, or suspended, type is illustrated herewith, and will cool up to 1½ tons of refrigeration with direct expansion or low-temperature water. This model cools, dehumidifies, and circulates 700 cu. ft. of air per minute. One of its features is a finned coil refrigerant superheater which pre-cools entering air by extracting the remaining refrigeration effect in the suction line.

Director-of-Design J. H. Holton suggested apartment houses as a new market for the self-contained Room Weathermaker because of its comparatively simple installation (water supply, drain, and electrical connections only being needed). This was an interesting observation in view of the fact that air-conditioning engineers have looked enviously at the apartment house market for some time, but until now haven't felt that equipment had been developed to fit the need.

Carrier's first intention to bring out a beer cooler has been abandoned due to the potential competition in the new field. Commercial machines will be sold for beer cooling, of course.

Westinghouse Active

The wheels of industry were turning at a high rate up in the East Springfield (Mass.) works of Westinghouse, where household compressor units and appliance motors are built. Refrigerator cabinets, you know, are built in Mansfield, Ohio, and shipped direct to distributors who install the machine unit.

Output of the refrigeration factory was 450 machines per day when I was there last week, the production of 1½ shifts per day. Expectations of E. J. Stone, assistant superintendent of production, are that the output will be boosted shortly to 600 per day with two full shifts.

In the adjoining plant, motors for washing machines, refrigerators, and gasoline pumps are produced in a systematic arrangement of automatic machines. One batch, I noted, was an order of 10,000 motors for Kelvinator.

F. A. Harshberger, refrigerating engineer, and Frank McCausland of the New York office, took me through the refrigeration plant. Later G. S. McCloy, research engineer, let me into the inner sanctum of the laboratory. Here were calorimeters, variable humidity and temperature rooms, and all manner of apparatus for testing refrigeration equipment.

Bull Session

After the whistle blew, several Westinghouse engineers gathered in one of the offices to gossip and exchange

stories. There were H. J. Hughes, Dan Frain, Jack Schrommer, Harshberger, and Bob Tull, with whom I once suffered a fraternity initiation years ago at the University of Illinois. In the evening, Bob introduced me to his charming wife, and took me for a ride around the town before train time.

New Yorkers

Max Breitung, president of Alfol Insulation Co., supplier of aluminum foil insulation, has taken larger office space in the Chrysler building. Business has been good, he claims, particularly in "high-temperature" applications such as in ovens, steamships, etc. Refrigerated truck builders are using Alfol, too, he says.

E. R. Troxell, general sales manager of J. H. McCormick Co., manufacturer of Airtrol air-conditioning equipment, says his engineers are giving most of their attention to railroad air condi-

tioning this year, working with several of the large railroads.

R. W. Boggs tried to explain to me the set-up of Union Carbide & Carbon Corp. and affiliates, of which he is publicity director. It's a pretty complicated organization, with a maize of affiliates; even harder to understand than the corporate structure of the American Radiator and Standard Sanitary Corp. and its subsidiaries.

It was clear, however, that Mr. Boggs is the one to call on for information, and that his company is important in the refrigeration picture because of these products: Prest-O-Lite refrigerant drums, Haynes Stellite needle valves, and refrigerants such as isobutane, butane, and propane.

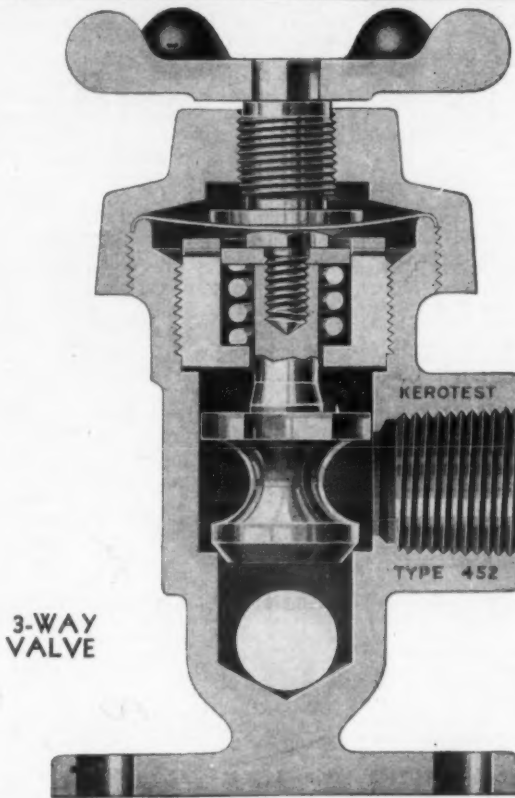
Buffalo Notes

In Buffalo, Horace Laney, who handles Fedders advertising, reported a rushing business in Fedders' several

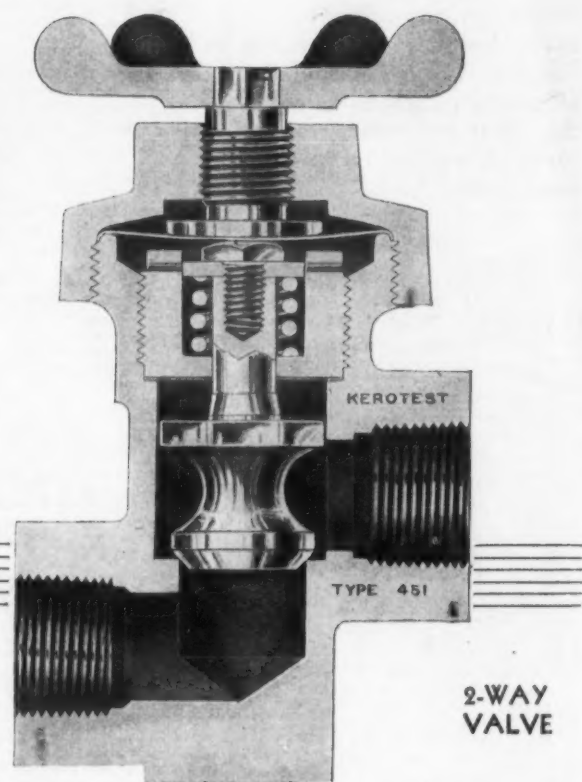
beer coolers. I wonder if Fedders got the job for a local barber shop which serves bottled beer to its patrons.

Tricold Refrigerator Corp. has moved its offices to larger quarters in the Jackson building. T. Irving Potter, president, who is well known to the industry for placing a 20-page ad in *ELECTRIC REFRIGERATION NEWS* last spring, says Tricold sales so far this year have equalled all those of last year.

E. B. Jewett, president of Jewett Refrigerator Co., was too busy to talk much when he came through his local showroom. L. L. Applegate, sales manager for United Home Owners, the local distributor, was a little more conversant. Spring sales of electric refrigerators have been surprisingly good, he said. Jewett, you will recall, got into the electric refrigeration business only about a year ago. New showrooms have just been occupied at 243 Delaware.



3-WAY VALVE



2-WAY VALVE

Full, unrestricted flow through larger sizes of tubing with

KEROTEST

COMMERCIAL SIZE BRASS MANIFOLD VALVES and FITTINGS ...

Strong, rugged, extra-heavy in body construction, these Kerotest Commercial Service Valves meet the most rigid specifications of the refrigerator and air conditioning industry... pressure tested by the Underwriters' Laboratories to 11250 pounds in all positions and incorporating many features of design found only in Kerotest.

For a full description of the 2-way and 3-way Packless Valve illustrated above send for our catalogue No. 5.

KEROTEST MFG. CO.
Pittsburgh, Pa.

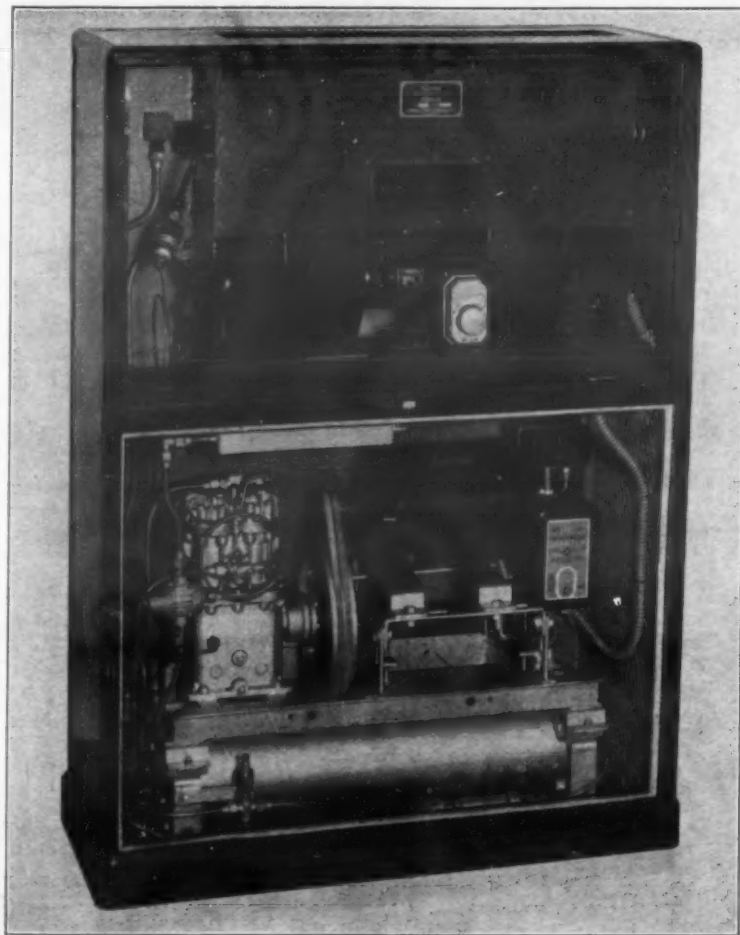
FACTORY REPRESENTATIVES

Chicago, Ill. G. C. Taylor
2317 W. Marquette Road (Local Stock)
Dayton, Ohio E. J. Kimm
517 Grafton Ave.
Detroit, Mich. Thomas B. McLaughlin
18273 Santa Rosa Drive
Los Angeles, Calif. Van D. Clothier
1015 E. Sixteenth St. (Local Stock)
New York, N. Y. J. A. Strachan
806 Graybar Building
San Francisco, Calif. A. W. V. Johnson
Merchants Exchange Bldg. (Local Stock)

FOREIGN REPRESENTATIVES

Australia George Brown & Co., Ltd.
267 Clarence St., Sydney, N. S. W.
Europe Melchior, Armstrong, Dessau Co., Inc.
116 Broad St., New York, N. Y.
Hawaiian Islands Theo. H. Davies & Co., Ltd.
Honolulu, T. H.
Puerto Rico Refrigeration Supply Co.
P. O. Box 328, Puerto de Tierra, San Juan

Compressor and Conditioner—All in One Cabinet



A peak into the anatomy (front cover removed) of Carrier's new self-contained Room Weathermaker. The one-ton water-cooled machine is mounted on springs and enclosed in a sound-insulating compartment. The 59x40x17½-in. cabinet has an optional provision for introducing fresh air.

LOCAL REPRESENTATIVES (Stocks Maintained for Immediate Delivery)

Amarillo, Texas Axtell Co. 816 Grant St.
Atlanta, Ga. J. M. Tull Rubber and Supply Co., Inc. 285 Marietta St.
Baltimore, Md. Clendenin Bros., Inc. 108 South Street
Boston, Massachusetts A. E. Borden Co. 110 High Street
Cincinnati, Ohio Merkel Bros. Co. Burbank Street
Cleveland, Ohio Williams & Company, Inc. 1748 East 22nd St.
Decatur, Illinois Field & Shorb Co. 133 Williams St.
Des Moines, Ia. W. 11th & D.M.U.R.R.
Farmwood, Miss. Enoch Sales Co. 711 N. Tangipahoe St.
Fort Worth, Texas Axtell Co. 8th & Grove Sts.
Greensboro, N.C. Home Appliance Service Co. 714 W. Market St.
Houston, Texas Lingo-Walter Company 734 M & M Bldg.
Indianapolis, Ind. F. H. Langenkamp Co. 229 E. South St.
Lubbock, Texas Axtell Co. 900 Avenue H
Milwaukee, Wis. Chase Brass & Copper Co., Inc. 512 N. Water St.
Minneapolis, Minn. Chase Brass & Copper Co., Inc. 145 N. 10th St.
Newark, N.J. McIntire Connector Co. Jefferson and Chestnut Sts.
New York, N.Y. Paramount Electrical Supply Co., Inc. 58 Warren Street
Philadelphia, Pa. Melchior, Armstrong, Dessau Co., Inc. 1135 Callowhill St.
Pittsburgh, Pa. Williams & Co., Inc. 901 Pennsylvania Ave.
Portland, Oregon Harrison Sales Company 200 N. 13th St.
Rockford, Ill. All-Makes Refrigerator Service Co. 305 East State St.
San Angelo, Texas Axtell Co. 506 So. Oak St.
St. Louis, Mo. 2817 Laclede Avenue
Seattle, Wash. Harrison Sales Co. 314 Ninth Ave., No.
Sioux City, Iowa National Refrigeration Service 2310 East 9th St.
Springfield, Mass. Home Utilities Company 300 Broad St.
Syracuse, N.Y. Syracuse Supply Company 314 W. Fayette St.
Washington, D.C. Refrigeration Equipment & Supply Co., Inc. 308 10th St., N. W.
Wilmington, N.C. N. Jacob Hardware Co. 1012 So. Front St.
Winnipeg, Man., Canada Arctic Ice and Fuel Co., Limited 156 Bell Ave.

PATENTS

ISSUED APRIL 25, 1933

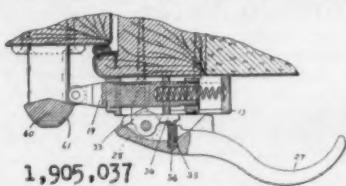
1,904,991. REFRIGERATING APPARATUS. Robert R. Candor, Dayton, Ohio, assignor to Frigidaire Corp., Dayton, Ohio, a Corporation of Delaware. Filed Feb. 28, 1929. Serial No. 343,399. 8 Claims. (Cl. 62-115.)

1. A refrigerating apparatus including liquid refrigerant supplying and gaseous refrigerant liquefying means, an expansion coil receiving liquid refrigerant from said means, an automatic pressure regulating valve for said coil, a water cooling conduit in thermal relation with said coil, the flow of refrigerant in said coil and of liquid in said conduit being in relatively opposite directions, a valve for said conduit, said last named valve and said regu-

lating valve having common manual means for controlling same.

1,905,037. REFRIGERATING APPARATUS. William H. Matthews, Dayton, Ohio, assignor to Frigidaire Corp., Dayton, Ohio, a Corporation of Delaware. Filed Feb. 27, 1930. Serial No. 431,749. 10 Claims. (Cl. 292-173.)

1. In combination with a keeper therefor, a free bolt latch comprising a casing, a bolt mounted to reciprocate in said casing,



1,905,037

a handle, and means cooperating with said handle for positively reciprocating said bolt in both directions, and means whereby said bolt may reciprocate out of and into engagement with said keeper without imparting motion to said handle.

1,905,040. AIR CONDITIONING SYSTEM FOR RAILWAY CARS. Lee W. Melcher, Winnetka, Ill. Original application filed Sept. 2, 1930. Serial No. 479,227. Divided and this application filed July 9, 1931. Serial No. 549,623. 12 Claims. (Cl. 257-7.)

5. The combination with a railway car, of an air filter mounted under the body of the car, a conduit extending through the bottom of the car, a motor-driven fan also mounted under the car-body and connected to draw air through the filter and to discharge the filtered air through the conduit into the car, and a refrigerating unit associated with the filter and fan and comprising a refrigerant line positioned to cool air forced through the filter by the fan.

1,905,101. AIR CONDITIONER. Halbert T. Johnson, Paso Robles, Calif. Filed March 18, 1932. Serial No. 599,677. 6 Claims. (Cl. 261-92.)

1. An air conditioner comprising an open-topped tank for liquid, a horizontal open-ended rotary liquid-absorbing air conduit disposed relative to the tank to dip into the liquid, a fan inside the conduit clear of the liquid, arranged to cause air to be drawn into the conduit from one

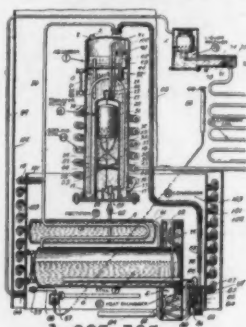
end and to be then thrown into contact with the inner periphery of the conduit and discharged from the opposite end thereof, and means to rotate the fan and conduit in opposite directions.

1,905,131. REFRIGERATING APPARATUS. Clarence Birdseye and Bicknell Hall, Gloucester, Mass., assignors to Frosted Foods Co., Inc., Dover, Del., a Corporation of Delaware. Filed Feb. 25, 1931. Serial No. 518,060. 30 Claims. (Cl. 62-114.)

1. A refrigerating apparatus comprising a series of substantially horizontal heat-conductive plates movably disposed in substantially vertical alignment and adapted to receive thereon and therebetween products to be frozen, means for so connecting said plates as to maintain them equally spaced thereof, and means for supplying cooling medium to the plates.

1,905,308. REFRIGERATING SYSTEM. Ralph E. Schurtz, Kansas City, Mo., assignor, by mesne assignments, of one-half to R. W. Bailey and C. T. Jobes, Kansas City, Mo. Filed April 28, 1923. Serial No. 635,240. 9 Claims. (Cl. 62-5.)

1. In an absorption system of refrigeration including an absorber, a still, a condenser and an evaporator, a transfer de-



1,905,308

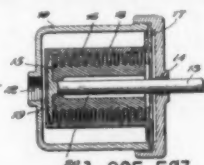
vice for transferring liquor from the absorber into the still, the transfer device including a tank having an inlet communicating with the absorber and an outlet communicating with the still, float-actuated means for opening the outlet and closing the inlet when a predetermined amount of liquor has flowed into the transfer device from the absorber, and a valve for opening and closing a pressure relief port at the top of the transfer device to maintain the port open while the liquor is flowing from the absorber into the transfer device.

1,905,422. AIR CONDITIONING APPARATUS. Robert P. Rasmussen, Chicago, Ill., assignor of one-fourth to Edvald L. Rasmussen and one-fourth to Aksel F. Rasmussen, Chicago, Ill. Filed Jan. 15, 1931. Serial No. 508,913. 8 Claims. (Cl. 261-112.)

1. In an air conditioner of the kind described, a plurality of vertical stacks of baffles, each baffle being formed of sheet metal formed to provide an upwardly inclined top surface and a downwardly inclined lower surface, the two joined at their forward edges, the lower surfaces being narrower than the upper surface and the upper surface terminating in a downwardly inclined flange.

1,905,583. FLEXIBLE CORRUGATED TUBULAR WALL. Jean V. Giesler, Knoxville, Tenn., assignor to The Fulton Sylphon Co., Knoxville, Tenn., a Corporation of Delaware. Filed May 16, 1927. Serial No. 191,826. 7 Claims. (Cl. 157-156.5.)

1. An axially expandable and collapsible, corrugated metallic bellows having relatively deep, flexible corrugations and pro-



1,905,583

vided with a casing of elastic material which substantially fills like corrugations and which is deformable but substantially incompressible, and means cooperating with said elastic material to limit the extent of its deformation in the direction of the radii of said bellows and thereby limit the collapse of said bellows by limiting the extent to which said elastic material may be extruded from said corrugations as a result of the squeezing action thereon of the lateral walls of said corrugations.

1,905,584. METHOD OF MAKING THIN WALLED TUBES. Jean V. Giesler, Knoxville, Tenn., assignor to The Fulton Sylphon Co., Knoxville, Tenn., a Corporation of Delaware. Filed Feb. 21, 1930. Serial No. 530,453. 10 Claims. (Cl. 29-156.)

1. In the manufacture of thin walled tubes for highly-flexible, deeply-corrugated tubular metal walls, the method which includes forming a tube with a non-homogeneous seam including a metal different from that of the tube, alternately subjecting the tube to a plurality of drawing operations during which the tube wall is reduced in cross section and a plurality of operations during which the tube is subjected to a sufficient temperature for a sufficient time to permit a substantial grain growth therein and continuing said alternate operations until under microscopic examination said seam has disappeared.

1,905,597. REFRIGERATOR. Joseph H. Long, Cleveland, Ohio. Filed May 10, 1932. Serial No. 610,468. 4 Claims. (Cl. 257-22.)

2. A refrigerator comprising an insulated box, an upper and a lower manifold in the box, a plurality of parallel cooling pipes mounted within the box and connected to said manifolds, nipples carried by each manifold and extending through the box, an intake pipe connected to one of said nipples and having the opposite end thereof disposed in a position to receive cool air, and means connected to the other nipple to draw the cool air through said intake pipe and said cooling pipes.

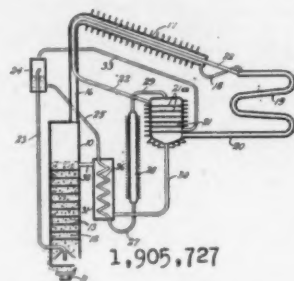
1,905,602. METHOD OF QUICK FREEZING. Frank Howard Patterson, Fredonia,

Kan. Filed Aug. 31, 1931. Serial No. 560,480. 3 Claims. (Cl. 62-104.)

1. The method of quick freezing which includes the steps of packing the article in a container with a comminuted material which will not cohere when subjected to quick freezing temperatures, said material and the container having a high coefficient of thermal conductivity, and then freezing the article by placing the container in contact with a freezing medium.

1,905,727. ABSORPTION REFRIGERATING SYSTEM. Guido Maluri and Raoul Felice Bossini, London, England, assignors, by mesne assignments, to Electrolux Servel Corp., a Corporation of Delaware. Filed June 9, 1930. Serial No. 460,018, and in Great Britain Oct. 29, 1929. 31 Claims. (Cl. 62-119.5.)

1. In a generator of an absorption refrigerating apparatus, means presenting small interstices located mutually closely adja-



1,905,727

cent throughout substantially the entire depth of the liquid space of said generator for restraining vertical movement of the liquid within said space.

1,905,775. ILLUMINATED REFRIGERATOR DISPLAY CASE. Charles E. Wickes, Mount Vernon, N. Y., assignor to A. C. Wickes Mfg. Co., New York, N. Y., a Corporation of New York. Filed Sept. 23, 1930. Serial No. 483,768. 6 Claims. (Cl. 62-89.5.)

1. The combination of a display case having a bottom section and a top section with inwardly sloping sides, tray supports intermediate the top and bottom sections and spaced from the sides thereof, of refrigerating means disposed in the bottom section adjacent the front wall thereof, said bottom section having a food storage compartment disposed rearwardly of said refrigerating means or cooling coils.

1,905,817. ODORANT FOR REFRIGERATION. Frank J. Dobrovolsky, Niagara Falls, N. Y., assignor, by mesne assignments, to The Reossler and Heasler Chemical Co., New York, N. Y., a Corporation of Delaware. Filed Jan. 2, 1930. Serial No. 418,166. Renewed Sept. 10, 1931. 6 Claims. (Cl. 252-5.)

1. A composition of matter comprising a refrigerant of the group comprising hydrocarbons and halogenated hydrocarbons containing an alkyl mercaptan in amounts suitable for warning purposes.

1,905,853. HEAT INSULATING PANEL MEMBER. Richard T. Griffiths, Akron, Ohio, assignor, by mesne assignments, to Miller Rubber Co., Inc., Wilmington, Del., a Corporation of Delaware. Filed Dec. 20, 1929. Serial No. 415,541. 9 Claims. (Cl. 20-35.)

1. An insulating panel of the character described comprising a front member of hard rubber having a facing plate of metal



1,905,853

homogeneously united thereto, and a self-supporting imperforate back member of hard rubber spaced therefrom and having a continuous non-conducting flanged mar-

gin homogeneously united to the rubber of the front member.

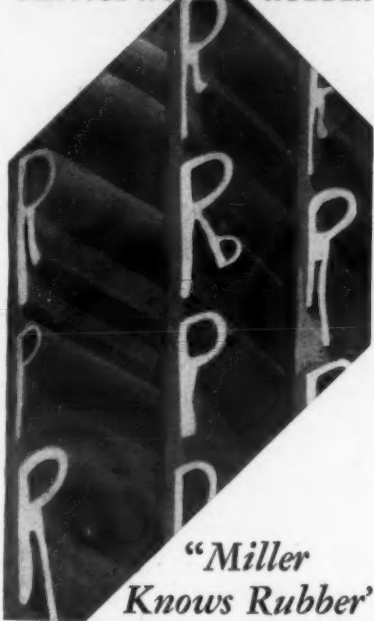
1,905,885. DRY ICE CONVERSION UNIT. Edwin O. Bennett, Ponca City, Okla., assignor to Continental Oil Co., Ponca City, Okla., a Corporation of Delaware. Filed Oct. 31, 1931. Serial No. 572,245. 4 Claims. (Cl. 62-91.5.)

3. An ice box including the combination of a container having heat insulated walls, a perforated partition in said container dividing it into upper and lower chambers, said partition being adapted to support a piece of dry ice, a tray adapted to contain water to be frozen slidably positioned below said partition within said lower chamber, a plurality of openings in said

(Continued on Page 15, Column 4)

Doorseal Designing

AN EXAMPLE OF MILLER'S EXPERIENCED TECHNICAL SERVICE IN RUBBER



and refrigeration!

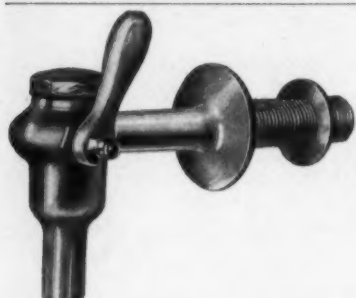
10 years close cooperation in every step of electric refrigeration's forward march has made the Miller technical staff a part of your industry. We know your problems and understand your language.

For almost every important refrigerator we have developed special doorseals, for instance. Entirely of rubber, remarkably free from odor, checking, and cracking—Miller doorseal compound keeps its spring, and reduces to a minimum the deteriorating action of butter, grease, and mayonnaise.

Extruded, sponge, soft, hard, and "Anode" rubber.

Miller

Miller Rubber Products Co., Inc., Akron, O.



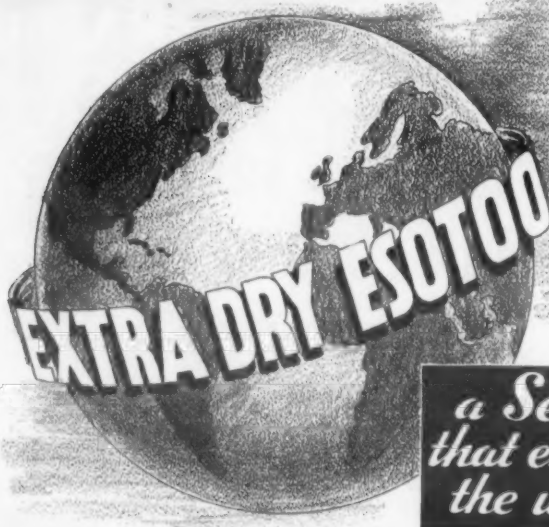
REPEAL BEER SPIGOT

- EASY POSITIVE ACTION
- FEW MOVING PARTS, EASILY CLEANED
- SOLID BRONZE, HIGHLY POLISHED
- FULLY GUARANTEED

PRICE NET, F. O. B. BETHLEHEM
1 - 24 . . \$3.50 Immediate
25 - 49 . . \$3.25 Delivery
50 or over \$3.00

Certain territories still open for distributors. Write or wire.

Industrial Refrigeration Co. Newton Ave. Bethlehem, Pa.



36 Convenient ESOTOO Service Stations
— USE YOUR NEAREST ONE —

West Norfolk, Va.—Virginia Smelting Co.
Atlanta, Ga.—Security Warehouse Co.
Buffalo, N. Y.—Rolls Chemical Co.
Boston, Mass.—Virginia Smelting Co.
Charlotte, N. C.—D. & J. Supply Co.
Chicago, Ill.—Innis, Speiden Co.
Cincinnati, Ohio—Cincinnati Term. & Warehouse, Inc.
Cleveland, Ohio—Innis, Speiden Co.
Denver, Col.—Denver Fire Clay Co.
Detroit, Mich.—W. C. Dever.
El Paso, Tex.—Denver Fire Clay Co.
Honolulu, Hawaii—Weldsteel Supply Co.
Houston, Tex.—Universal Term. & Warehouse Co.
Kansas City, Mo.—G. S. Robins & Co.
Jacksonville, Fla.—Mead Warehouse & Dist. Co.
London, Eng.—Honeywell & Stein, Ltd.
Los Angeles, Cal.—The Braun Corp.
Miami, Fla.—Rickert Warehouse & Storage Co.
Montreal, Que.—Bruce, Ross, Ltd.

New Orleans, La.—Bartlett Chemicals, Inc.
New York City—Virginia Smelting Co.
Philadelphia, Pa.—Merchants Warehouse Co.
Pittsburgh, Pa.—Kirby Transfer & Storage Co., Inc.
Portland, Ore.—Carl F. Miller Co.
Rochester, N. Y.—Rolls Chemical Co.
St. Louis, Mo.—G. S. Robins & Co.
St. Paul, Minn.—Midwest Chemical Co.
San Francisco, Cal.—Braun, Knecht-Heimann Co.
Salt Lake City, Utah—Denver Fire Clay Co.
Seattle, Wash.—Carl F. Miller Co.
Sydney, Australia—Dangar, Gedyo & Co., Ltd.
Syracuse, N. Y.—Great Northern Warehouse Co.
Tampa, Fla.—Lee Terminal & Warehouse Corp.
Toronto, Can.—Bruce, Ross, Ltd.
Vancouver, B. C.—Shanahan Chemicals, Ltd.
Winnipeg, Manitoba—Beaver Soap & Chemicals, Ltd.

EXTRA DRY ESOTOO

TRADE MARK REGD U.S. PAT. OFF.

VIRGINIA SMELTING COMPANY
West Norfolk Virginia

F. A. Eustis, Sec., 131 State St., Boston and 75 West St., New York.

A NEW FIN COIL by PEERLESS

Wedge-locked and edge-locked aluminum fins on tinned copper tubing for methyl chloride, sulphur dioxide, F-12, etc.—aluminum tubing for ammonia. Absolute Metal to Metal Contact. A Superior Coil in which Soldered Return Bends have been eliminated. Priced to meet 1933 conditions. Write—Wire for Catalog.

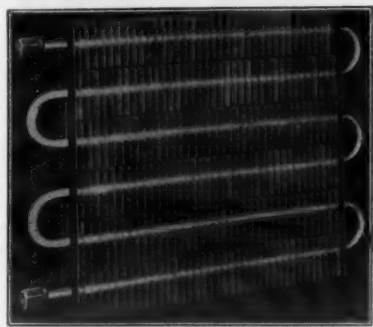


PEERLESS ICE MACHINE CO., 515 W. 35th St., Chicago, Ill.

"REMPE" SUPER COLD FIN COILS

for
Methyl Chloride,
Ammonia, F-12 and
Sulphur Dioxide

REMPE "FIN COIL" CO.
3000 W. CARROLL AVE.
CHICAGO KEDZIE 0483 ILL.



We carry a complete stock of
EVERYTHING IN REFRIGERATION
including

FEDDERS COMMERCIAL COILS

Thermostatic Expansion Valves, Tubing,
Manifolds, Fittings, Controls, etc.

Save money, time and work—Buy everything from
one source

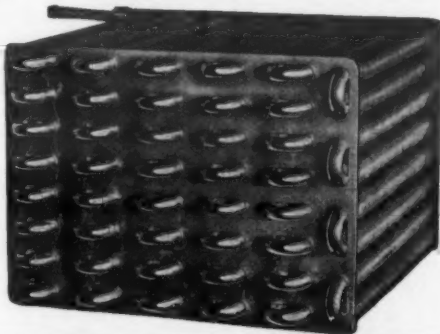
MELCHIOR, ARMSTRONG, DESSAU CO.
1135 CALLOWHILL ST. PHILADELPHIA
116 BROAD ST. NEW YORK
STATLER BLDG. BOSTON

ROME EVAPORATORS

Highest Efficiency
With Smallest Number
of Joints

Rome-Turney Radiator Co.
Rome, N. Y.

Makers of Rome Condensers and
Helical Finned Tubing



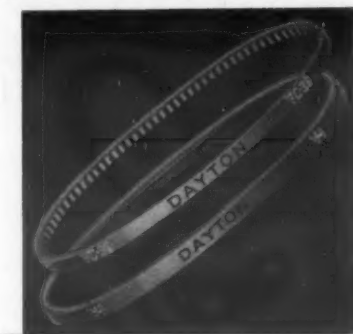
Hercules had nothing on you

With a Balance Truck you can handle refrigerators, heavy boxes, stoves, crates, etc., with ease. The truck carries the load with no strain on your arms. The padded nose piece has instant, exact adjustment. Write today for details.

We also manufacture the Caster X-70
Refrigerator Trucks

Self-Lifting Piano Truck Co.
Findlay, Ohio

Manufacturers of Trucks for 33 Years



Dayton V-Belts

For all makes and types of refrigerators. There is a stock near you. Ask for price list and name of your nearest distributor.

THE DAYTON RUBBER MFG. CO.
Dayton, Ohio
The World's Largest Manufacturer of V-Belts

BEER COOLING EQUIPMENT

for every type installation. Mohawk Dry Type Coils and Submerged Type Coils, Storage Coolers and Bottle Dispensing Coolers. Same high efficiency as characterizes Mohawk Domestic Equipment. Prices and discounts are right!

MOHAWK
REFRIGERATION

Rudolph Wurlitzer Manufacturing Company,
North Tonawanda, New York

Please send complete information on Mohawk Beer Cooling Equipment.

Name _____

Address _____

MAIL THIS COUPON
for \$5 FACTS

QUESTIONS

Wants Financed Line

No. 1188 (Commercial Cabinet Distributor, Pennsylvania)—"Could you give me the name of a manufacturer which will finance the sale of commercial and household electric refrigerators direct to the trade? In other words, I will make the sale, install the machines, and service them, but I want the manufacturer to handle the financing contract."

Answer—Most of the larger manufacturers have arrangements with finance companies, such as Commercial Credit Co. and C. I. T. Corp., to handle instalment purchase contracts.

Direx Beer Coolers

No. 1189 (Engineer, Illinois)—"Will you please advise me where I may see one of the 'Direx beer coolers.' I understand this cooler is made in Chicago, but have been unable to locate the manufacturer. I have been informed that this cooler has a Temprite installed in it to keep the temperature of the beer at 40° F."

Answer—These beer coolers are made by Direx Corp., 307 N. Michigan Ave., Chicago, Ill. They are equipped with Temprite instantaneous cooling units manufactured by Liquid Cooler Corp., 1349 E. Milwaukee Ave., Detroit, Mich.

Specifications

No. 1190 (City Engineer, Louisiana)—"This department is endeavoring to compile a table showing the names of all refrigerator manufacturers in the United States, and also every unit that was put on the market by each individual manufacturer for both residential and commercial uses. Besides each unit, we would like to know the horsepower rating of the motor, and the capacity of the box in cubic feet."

"I understand that some time ago you published information similar to this in ELECTRIC REFRIGERATION NEWS. We will appreciate your furnishing this information and any other data that you feel would be useful."

Answer—All available specifications on 273 models of household electric refrigerators made by 35 different manufacturers were published in the March 22 issue of ELECTRIC REFRIGERATION NEWS.

Book on Porcelain Enameling

No. 1191 (Engineer, Java)—"Please be so kind as to advise me the name of an up-to-date book on porcelain enameling."

Answer—"The Advanced Technique of Porcelain Enameling" by J. E. Hansen, published in 1932 by Ferro Enamel Corp., 2100 Keith Bldg., Cleveland, Ohio.

Argon Compressor Oil

No. 1192 (Manufacturer, Canada)—"Can you tell us the name of the oil company that supplies Argon compressor oil?"

Answer—Standard Oil Co.

Premier Coil Cleaning Co.

No. 1193 (Engineer, Illinois)—"In this week's issue of ELECTRIC REFRIGERATION NEWS you have an article on cleaning beer coils, together with a sketch of a device manufactured by the Premier Coil Cleaning Co. of Chicago. Will you be good enough to send me the address of this company?"

Answer—208 S. LaSalle St., Chicago, Illinois.

Dry Ice Refrigerator

No. 1194 (Distributor, California)—"We are interested in locating the manufacturer of a Dry Ice refrigerator which was used for some years in Europe, and which is now being used in this country. The freezing unit uses a 20-lb. lump of solid CO₂, which lasts for a week. Do you know who makes this box, and where we can locate same?"

Answer—Fleetwood Sales, Inc., 4519 Walnut St., Philadelphia, Pa.

Oil-Burning Refrigerator

No. 1195 (Distributor, Texas)—"Please put us in touch with a distributor or manufacturer of oil-burning refrigerators."

Answer—Gibson Electric Refrigerator Corp., Greenville, Mich.

Beer-Cooling Equipment

No. 1196 (Distributor, Florida)—"Please advise us names of reliable manufacturers who can make prompt delivery on beer-cooling equipment."

Answer—See advertisements in ELECTRIC REFRIGERATION NEWS.

New Ice Cube Tongs

No. 1197 (Michigan)—"On page six of the April 19 issue of the News you described some new ice cube tongs manufactured by Henry Paulson & Co. Would it be possible to get the manufacturer's address?"

Answer—37 S. Wabash Ave., Chicago, Ill.

PATENTS

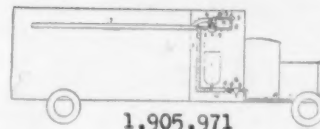
(Continued from Page 14, Column 5)
container adapted to permit a circulation of ice box air through said container, and means to vary the effective area of said openings.

1,905,933. HIGH SPEED COMPRESSOR. Willfred Fourness, Oakland, Calif., assignor to Fourness Development Corp., Ltd., New York, N. Y., a Corporation of New York. Filed May 12, 1930. Serial No. 451,824. 32 Claims. (Cl. 230-29.)

1. In a compressor, a plurality of oscillating cylinders having a passageway therebetween for the flow of a fluid, one of said cylinders containing a piston and the other a sliding valve, and means for keeping said passageway continuously open and to obviate escape of fluid from the passageway directly to the exterior of the cylinders.

1,905,971. PROCESS AND APPARATUS FOR REFRIGERATION WITH LIQUEFIED FUEL GAS. Delos W. Davisson and Ferdinand G. Welke, San Francisco, Calif., assignors to Shell Development Co., San Francisco, Calif., a Corporation of Delaware. Filed July 28, 1931. Serial No. 553,524. 12 Claims. (Cl. 62-92.)

2. Process of refrigerating comprising reducing the pressure on a normally gaseous fuel stored under high pressure,



1,905,971

vaporizing said fuel under super-atmospheric pressure, reducing the pressure on the gas produced and thereafter combusting all of said gas.

1,906,131. BATTERY LIGHT FOR REFRIGERATORS, ICE BOXES, CLOSETS, AND THE LIKE. George A. Baylis, Huntington, N. Y. Filed July 17, 1931. Serial No. 551,525. 2 Claims. (Cl. 240-4.)

1. A battery light for refrigerators, closets and the like comprising a casing formed with an extension adapted to be connected to an ice box or the like, a pair of batteries arranged in the casing, means for connecting the batteries in series, said casing formed with a depressed portion presenting a lamp socket, a lamp positioned in said socket, means forming a circuit including said batteries and said lamp, said means including a switch and a reciprocating member for closing said switch, a spring acting on said reciprocating member for moving the same to a closed position, said casing holding said reciprocating member positioned to engage the door of the refrigerator, whereby said door is adapted to move the reciprocating member to an open position when the door is closed.

1,906,183. FROZEN COMESTIBLE PACKAGING. Clarence W. Vogt, Louisville, Ky., assignor to Vogt Instant Freezers, Inc., Louisville, Ky., a Corporation of Delaware. Original application filed Jan. 9, 1932. Serial No. 585,745. Divided and this application filed July 28, 1932. Serial No. 625,316. 3 Claims. (Cl. 206-66.)

2. As a new article of manufacture, a packaged frozen comestible, comprising a substantially solid block of ice cream or the like, and a wrapper extending around the block and including two separate portions, each extending around substantially one-half of the periphery, and each terminating in a tab, said tabs being at substantially diametrically opposite points, whereby the block may be readily freed from the wrapper by pulling in opposite directions on said tabs.

FOSTER SNELL MOVES BROOKLYN OFFICE

BROOKLYN—Foster D. Snell, Inc., consulting engineers here, has moved to 305 Washington St. where larger quarters have been provided for both their offices and laboratories.

At the new address the ninth floor has been remodeled for a laboratory with units for research, microscopy, library, apparatus and chemical tests.

FRIGIDAIRE MAN TALKS ON AIR CONDITIONING

INDIANAPOLIS—Frank C. Lyons, director of education for the air-conditioning division of Frigidaire Corp., addressed members of the Indiana Editorial Association on "Air Conditioning—A New Field for Advertising," at their annual meeting last week.

Testing Laboratory
For refrigerators
and refrigerating equipment
George B. Bright Co.
Refrigerating Engineers and Architects
2615 12th St., Detroit, Mich.

1000 WANTED 1000
Electric Refrigerators
used or new
Phone or wire complete details
Cumberland 1013.
Paul Steiner
1204 North 5th Street
Philadelphia, Pa.

How to
save money on
Motor, Transmission,
Crank, Eccentric and Com-
pressor Shafts: Send us your
blue prints, we will send you our
prices. Write today.
MODERN MACHINE WORKS
156 N. Milw. St. Milwaukee, Wis.

CLASSIFIED

PAYMENT in advance is required for advertising in this column.

RATES: 50 words or less, 1 time, \$2.00, extra words 4 cents each. Three times, \$5.00, extra words 10 cents each.

REPLIES to advertisements with box numbers should be addressed to the box number in care of Electric Refrigeration News, 550 Macabees Bldg., Detroit, Mich.

POSITIONS AVAILABLE

WANTED—Application from designer of commercially successful hermetically sealed household refrigerator. Give experience in detail and minimum compensation expected. Box 560.

POSITIONS WANTED

YOUNG married man, refrigeration technical school graduate, with four years diversified experience in Fort Wayne, Indiana, General Electric refrigerator plant and particularly interested in commercial work including air conditioning, desires position in product department of refrigeration selling organization. Prefer Southern location. Competent on household appliances. What have you? Box 561.

EQUIPMENT WANTED

WANTED: All kinds of Kelvinator and Frigidaire commercial equipment and parts. Also all kinds of commercial size refrigerators and display cases, new or used. Give full details and price in first letter. Lawton Huffman, Marshalls Creek, Pa.

PATENT RIGHTS FOR SALE

U. S. PATENT recently allowed. Commercial refrigeration unit for food stores, trucks, air conditioning, etc. Combined direct expansion and cold accumulation; most modern; eutectic brine; off peak operation; successfully marketed abroad for several years; ready to start manufacturing. D. G. Houghton, Mamaroneck, N. Y.

SELL!

a completely equipped
REFRIGERATOR

FEDERAL
REFRIGERATOR
FURNISHINGS

The only complete line—saves
space—saves food—saves money

They increase the capacity and
efficiency of every refrigerator

FEDERAL ENAMELING
& STAMPING CO.

World's Largest Manufacturer
of Enamelled Kitchenware
PITTSBURGH • PENNSYLVANIA

McCord REFRIGERATION PRODUCTS

Commercial Evaporators

Domestic Evaporators

Condensers

McCord Ice Trays

Spiral Finned Tubing

Spiral Copper Finned Iron,

Steel or Copper Pipe

McCord
RADIATOR &
MFG. CO.
DETROIT - MICH.